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# Journal of the Society of Arts,

AND OF  
THE INSTITUTIONS IN UNION.

No. 522.

FRIDAY, NOVEMBER 21, 1862.

VOL. XI.

## Journal of the Society of Arts.

FRIDAY, NOVEMBER 21, 1862.

### INTERNATIONAL EXHIBITION OF 1862.

#### REPORTS OF THE JURIES.

The Reports will be published in super royal octavo, to range with the one-volume Jury Reports of 1851. The price of the volume, bound in cloth, to Members of the Society of Arts, to Jurors, and Guarantors, is fixed at 10s. ; to other persons, 15s. If bound in morocco, 7s. 6d. additional in each case.

The reports of each class are sold separately ; for prices see advertisement.

### EXAMINATIONS, 1863. — NOTICE TO INSTITUTIONS AND LOCAL BOARDS.

The attention of Secretaries of Institutions and Local Educational Boards is specially called to the following extract from the programme of examinations for 1863 :—

5. A detailed list of the chairman, secretary, and other members of each Local Board, giving not only their names but their addresses and designations, should be submitted to the Council of the Society of Arts before the 1st of January, 1863. In some cases the Local Educational Boards comprise such large districts that, for the convenience of the Candidates, Branch Local Boards have to be formed within the Districts. Whenever this is the case, the names and addresses of the members, both of District Board and of its Branch Boards must be forwarded to the Secretary of the Society of Arts. All changes in the composition of the various Boards now in existence, or to be formed hereafter, should be immediately notified to the Society of Arts.

### FIRST ORDINARY MEETING.

WEDNESDAY, NOVEMBER 19TH, 1862.

The First Ordinary Meeting of the One Hundred and Ninth Session was held on Wednesday, the 19th inst., Sir Thomas Phillips, F.G.S., Chairman of the Council, in the chair.

The following candidates were proposed for election as members of the Society :—

Abbott, Maj.-Gen. Sir { 73, Inverness-terrace, Ken-  
Frederick, C.B. . . { sington-gardens, W.

Ackland, William .	{ 121, 122, and 123, Newgate st., E.C. ; and 19, Church row, Newington Butts, S.
Ainsworth, Samuel .	{ (James Carter and Co.), High Holborn, W.C.
Aldebert, Isaac .	{ 57, Long-acre, W.C.
Allan, Alexander .	{ Locomotive Department, Scot- tish Central Railway, Perth.
Allan, John . . .	{ 2 and 3, St. Paul's Church- yard, E.C.
Allen, Henry . . .	{ 17, Percy-street, Bedford- square, W.C.
Andrew, Fred. Wm.	{ 3, Neville-terrace, Queen's Elm, S.W.
Ashworth, Taylor .	{ The Grove, Hanley, Stafford- shire.
Atkinson, J. Beavington .	{ Rosehill, Cotham-park, near Bristol.
Atkinson, Richard .	{ 31, College-green, Dublin.
Austin, James . . .	{ 8 and 9, Princes-street, Fina- bury, E.C.
Baiss, William Arnold	{ Denmark-hill, S.
Baldock, William .	{ Grove-cottage, Putney, S.W.
Barron, E. C. . . .	{ The Lodge, Chingford, Essex.
Barron, W. J. . . .	{ The Lodge, Chingford, Essex.
Barry, Dykes . . .	{ 4, Buckland-crescent, Belsize- park, St. John's-wood, N.W.
Barry, John George	{ Meriton's Wharf, S.E.
Barry, Sir Redmond	{ Carlton-gardens, Melbourne, Victoria.
Bedford, Francis .	{ 23, Rochester-road, Camden New-town, N.W.
Bell, Thomas . . .	{ Broadway-house, Plaistow. E.
Benson, James William	{ 33 and 34, Ludgate-hill, E.C.
Betts, Rev. Robert Wye	{ Lyndhurst-road, Peckham, S.
Bevan, Henry . . .	{ St. Mary's street, Shrewsbury.
Birrell, George . . .	{ Dunfermline, N.B.
Bolckow, Henry . . .	{ Marton-hall, Middlesbro'-on- Tees.
Booth, H. C. . . .	{ Harrogate.
Borwick, George .	{ 21, Little Moorfields, E.C.
Bradbury, Thomas .	{ Longroyde, Brighouse.
Bradbury, William .	{ 40, St. John's-park-villas, Haverstock-hill, N.W.
Brady, George . . .	{ Winchelsea-lodge, near Ilford.
Brassey, Thomas, jun.	{ Beaufort, Battle, Sussex ; and University Club, Suffolk- street, S.W.
Bretnall, T. D. . . .	{ 24, Huntley-street, Totten- ham-court-road, W.C.
Brooks, S. A. . . .	{ 10, Northampton-square, E.C.
Broomhall, J. . . .	{ Manor-st., Old Kent-rd., S.E.
Brothers, A. . . .	{ 14, St. Anne's-sq., Manchester.
Buckwald, C. . . .	{ 12, Old Quebec-street, W.
Burgoyne, Gen. Sir John	{ 8, Glo'ster-gardens, Padding- ton, W.
Fox, Bt., G.C.B., F.R.S.	{ 22, Chiswell-street, E.C.
Caslon, Henry William	{ 72, Great Tower-st., E.C. ; & Chessington, Surrey, S.W.
Clark, Gordon Wyatt	{ 56, Stamford-street, S.
Clarkson, Thos. Charles	{ Narborough-road, Leicester.
Clarkson, Wm. Watts	{ 1, Abingdon-terrace, Ken- sington, W.
Coathupe, Captain H. B. .	{ 1, Abingdon-terrace, Ken- sington, W.

- |   |  |                                |   |
|---|--|--------------------------------|---|
| Cole, James Ferguson  | { 11, Great James-street, Bedford-row, W.C.                                | Gresley, Thomas                | { Cauldwell-hall, Burton-on-Trent.  |
| Collins, Hyman Henry  | { 61, Torrington-square, W.C.  | Guillaume, Charles             | { 16, Myddelton-square, E.C.  |
| Cooper, Miss Adeline M.                                       | { 78, Coleshill-street, Eaton-square, S.W.                                 | Hall, Charles Godfrey          | { 89, Quadrant, Regent-street, E.C.   |
| Cooper, William   | { 42, Brompton-row, S.W.   | Hamilton, Capt. Henry          | { 71, Eccleston-square, S.W.  |
| Cope, Walter  | { 17, Terrace, Camberwell, S.  | George, R.N.                   | { 37, Harley-street, W.   |
| Cowan, Thomas William   | { Kent Iron Works, Bridge-street, Greenwich, S.E.                          | Hancock, Henry                 | { 12, Pantton-square, Coventry-street, W.   |
| Curzon, Hon. Robert   | { 24, Arlington-street, S.W.   | Harnett, William               | { Dowgate Dock, Upper Thames-street, E.C.   |
| Dawson, A.  | { Kingston-on-Thames, S.W.   | Harvest, D.                    | { Govanhaugh, Glasgow, N.B.   |
| De la Grangerie, Chevalier Dardenne                           | { Rue Chalot, 76, Paris.   | Headland, Edward               | { 6, Upper Portland-place, W.   |
| De L'Isle, Lord   | { Penshurst, Kent; and Ingleby Manor, Northallerton, Yorkshire.            | Heath, Robert                  | { 25, St. George's-place, Hyde-park corner, S.W.  |
| Denman, Lord  | { 28, Sackville-street, W.; and Middleton, Sheffield.                      | Heathorn, Captain Thos. Bridge | { Royal Artillery Barracks, Sheerness.  |
| Dickes, William   | { Clarendon - villas, Loughborough-park, Brixton, S.                       | Herdman, William G.            | { West Villa, Everton, Liverpool.   |
| Dobson, Christopher Terry                                     | { 13, Foxley - road, North Brixton, S.                                     | Heywood, Edwin                 | { Halifax.  |
| Doubleday, H.   | { Coggeshall.  | Higgs, Samuel, jun.            | { Penzance.   |
| Dowlcans, A. M.   | { Malvern - villa, Eldon - road, Victoria-road, Kensington, W.             | Hill, Lord A. Edwin, M.P.      | { 24, Belgrave-square, S.W.   |
| Duncan, Charles Stewart                                       | { 9, Inverness-terrace, W.   | Hodgkinson, Francis O.         | { 161, New Bond-street, W.  |
| Duncum, Chas.   | { 17, Wigmore-street, W.   | Honeyman, Rev. D., F.G.S.      | { Nova Scotia.  |
| Dunville, William   | { Richmond-lodge, Belfast.   | Horwood, H. J.                 | { 36, Albert-street, Regent's park, N.W.  |
| Earp, Thomas  | { 1, Kennington - road (near Female Orphan Asylum), Lambeth, S.            | Howard, Thomas                 | { King and Queen Iron Works, Rotherhithe, S.E.  |
| Eastham, John   | { Moorfield-villa, Halifax.  | Hutchins, William              | { 8, Croom's-hill, Greenwich, S.E.  |
| Eddy, C. W.   | { 8, Warwick-terrace, Belgrave-road, S.W.                                  | Jackson, Samuel                | { Bradford.   |
| Edmonds, Thomas Herbert                                       | { 29, St. George's-square, Regent's-park, N.W.                             | Jecks, Isaac                   | { Great Yarmouth.   |
| Edwards, Richard  | { Dale-hall, Burslem, Staffordshire.                                       | Jeffrey, John                  | { 61, Charlotte-street, Portland-place, W.  |
| Ellis, Charles  | { 21, Bedford-street, Covent-garden, W.C.                                  | Johnson, Colonel B. P.         | { Corresponding Secretary, New York State Agricultural Society, Albany, New York, U.S. America. |
| Ernst, F. Gustav  | { 19, Calthorpe-street, W.C.   | Johnston, James                | { Newmill, Elgin, N.B.  |
| Evvard, Jean  | { 35, Charles-street, Middlesex Hospital, W.                               | Keeling, Herbert Howard        | { King and Queen Iron Works, Rotherhithe, S.E.  |
| Falcke, David   | { Sutherland-house, Great Yarmouth.  | Kershaw, William               | { Suffolk-lodge, Brixton-road, S.; and 16, St. Mary Axe, E.C.                                   |
| Fetherston, John J.   | { 18, Suffolk-street, Dublin.  | Key, John                      | { White Bank Engine Works, Kirkcaldy, N.B.  |
| Fryer, Henry  | { 1 and 2, Gray's inn-place, Gray's-inn, W.C.                              | Kindon, Charles                | { Swan-street, Old Kent-road, S.E.  |
| Foley, Lord   | { 26, Grosvenor-square, W.; and Workop Manor, Nottinghamshire.             | Knott, J. H.                   | { Prospect-cottages, Rochampton, S.W.   |
| Forster, John   | { Denmark-hill, S.   | Kullberg, Victor               | { 12, Cloudesley-terrace, Islington, N.   |
| Forsyth, James  | { 8, Edward-street, Hampstead-road, N.W.                                   | Land, John                     | { 94, Cannon-street, E.C.   |
| Foveaux, Joseph Franz   | { 62, Strand, W.C.   | Langdale, E. F.                | { 72, Hatton-garden, E.C.   |
| Geeves, William   | { Caledonian Sawing and Planing Mills, New Wharf-road, Caledonian-road, N. | Lazard, Edward                 | { 46, Gloucester-crescent, Hyde-park, W.; and 11, Moor-gate-street, E.C.                        |
| George, Francis   | { 5, Sise-lane, E.C.   | Lea, Charles James             | { High-street, Lutterworth.   |
| Ghislin, Thomas Goulston                                      | { 72, Hatton-garden, E.C.  | Leak, Abraham                  | { 132, Piccadilly, W.   |
| Gisborne, F. N.   | { 3, Adelaide-place, London-bridge, E.C.                                   | Legg, Thomas Rowland           | { 11, Croom's-hill, Greenwich, S.E.   |
| Goding, Charles   | { 13, St. George's-place, Hyde-park-corner, S.W.                           | Lenthall, Henry                | { 222, Regent-street, W.  |
| Goding, William   | { 13, St. George's-place, Hyde-park-corner, S.W.                           | Letchford, R.                  | { Three Colts-lane, Bethnal-green, N.E.   |
| Gonzaga, H. S. H. the Prince Alexander of, and Duke of Mantua | { 11, Charles-street, Manchester-square, W.                                | Lillicrapp, W. P.              | { 19A, Davies-street, Berkeley-square, W.   |
| Goodall, Josiah   | { 12, Great College street, Camden-town, N.W.                              | Litchfield, Samuel             | { 19, Green-street, Leicester-square, W.C.  |
| Grant, George   | { National Boat-building Company, 123, Fenchurch-st., E.C.                 | Longbottom, John, Jun.         | { Osmondthorpe-hall, Leeds.   |
|   |  | Lovegrove, James, C.E.         | { Penbury-lodge, Dalston-rise, N.E.   |
|   |  | Lutley, James                  | { Queen's road, Brighton.   |
|   |  | Macleam, T. M.                 | { 26, Haymarket, S.W.   |
|   |  | Mann, Aldridge                 | { 122, Holborn-hill, E.C.   |

Marsden, W. J. . . . .	Upper Thorpe-road, Sheffield.	Stanley, W. F. . . . .	3 & 5, Great Turnstile, Holborn, W.C.
Martin, Thomas . . . . .	{ 22, Stock Orchard - villas, Caledonian-road, N.	Stevens, John Robert . . . . .	{ 8, Delamere-terrace, Maidahill, W.
Martin, W. A., C.E. . . . .	55, Great Sutton-street, E.C.	Stodart, Mrs. Matilda . . . . .	{ 31, Cloudesley-terrace, Islington, N.
May, Harry . . . . .	{ 9, Gloucester-grove West, Brompton, S.W.	Stubbs, William . . . . .	10, Elliott-street, Liverpool.
McCallum, D. . . . .	{ 1, Octagon, Union-road, Plymouth.	Sutton, Martin Hope, F.R.H.S. . . . .	{ Cintra-lodge, Reading.
McClure, Andrew . . . . .	{ Walbrook, E.C.; & 14, Ladbrooke-sq., Notting-hill, W.	Thompson, Joseph . . . . .	{ Beach-grove, Bowden.
McLennan, J. . . . .	6, Park-place, Highbury, N.	Thompson, Nathan . . . . .	{ National Boat-building Company, 123, Fenchurch-st., E.C.
Miller, John . . . . .	{ Sandland's Chemical Works, Aberdeen.	Truscott, Francis Wyatt . . . . .	{ 5, Suffolk-lane, Cannon-st., E.C.
Moffat, Major A. Hay . . . . .	65, Porchester-terrace, W.	Tueski Moritz Paul . . . . .	{ King's Lynn, Norfolk.
Molineux, Thomas . . . . .	{ 37, John Dalton street, Manchester	Turner, W. Shearman . . . . .	55, Old Broad-street, E.C.
Morewood, Edmund . . . . .	Stratford, E.	Turney, J. G. . . . .	{ Shirley-villa, South Norwood, S.
Newth, Frederick . . . . .	{ 44, Percival street, Clerkenwell, E.C.	Twelvetrees, Harper . . . . .	{ Bromley, Middlesex, E.
Nicholls, Henry . . . . .	52, Regent-street, W.	Tyler, James W. . . . .	{ 4, Wood street, Westminster, S.W.
Northcott, Edward . . . . .	{ 13, Road-lane, E.C.	Ullmer, Frederick . . . . .	15, Old Bailey, E.C.
Odling, Anselm . . . . .	{ 6, Prince's place, Kennington-road, S.	Usher, Rufus . . . . .	{ Bodicott, Banbury.
Oram, George . . . . .	19, Wilmington-square, E.C.	Vickers, James . . . . .	{ Woodlands, Tooting Common, S.
Ormsion, Henry . . . . .	{ Stanley-bridge, King's-road West, S.W.	Vines, Richard . . . . .	{ 3, Great College-street, Camden Town, N.W.
Oswald, Alexander Halldam . . . . .	{ 58, Green-street, Grosvenor-square, W.	Vogan, James . . . . .	{ Mill Wharf, Mill-street, Bermondsey, S.E.
Paine, Mrs. Caroline . . . . .	Farnham.	Ward, William A. . . . .	{ 3, Belgrave-villas, Barrington-road, Brixton, S.
Parkhurst, Rodie . . . . .	{ 7, Clarendon-terrace, Lewisham-road, S.E.	Watney, James, Jun. . . . .	10, Oxford-square, W.
Partridge, Ebenezer . . . . .	Whinfield Works, Smethwick.	Watts, Henry . . . . .	{ 31, Wellington-road, Stoke Newington, N.
Philp, Andrew Bell . . . . .	{ 10, Paradise-row, Stoke Newington, N.	Welton, Thomas . . . . .	{ 13, Grafton-street, Fitzroy-square, W.
Pooley, Henry, C.E. . . . .	Albion Foundry, Liverpool.	Wesley, Erasmus M. . . . .	{ 36, Great George-street, S.W.
Power, Bonamy . . . . .	19, Chesham-street, S.W.	Westley, Frederick Wm. . . . .	{ 10, Friar-street, Doctor's-commons, E.C.
Powis, Earl of, D.C.L. . . . .	{ 45, Berkeley-square, W.; and Powis Castle, Welchpool.	White, Frederick Meadows . . . . .	5, Brick court, Temple, E.C.
Pugh, Edward . . . . .	Bilston.	White, George . . . . .	{ Abbey-street Schools, N.E.
Pulham, James . . . . .	{ Broxbourne, Herts.	Whitehead, William . . . . .	203, Western Bank, Sheffield.
Purling, Charles . . . . .	150, Marylebone-road, N.W.	Whitelaw, John . . . . .	{ St. Clement's Wells, Musselburgh, N.B.
Ranwell, John Percival . . . . .	{ 1, Middleton-place, Stoke Newington-road, N.	Whitmee, John, Jun. . . . .	70, St. John-street, E.C.
Reed, William . . . . .	{ 5, Summer-place, Onslow-square, S.W.	Widnell, Henry . . . . .	{ Lasswade, near Edinburgh.
Revell, James . . . . .	267 & 272, Oxford-street, W.	Wilford, John . . . . .	{ Brompton, near Northallerton, Yorkshire.
Ridley, Arthur S. . . . .	{ 54, Gloucester-road, Regent's-park, N.W.	Williams, W. E. . . . .	{ High-st., Wandsworth, S.W.
Robertson, Archibald . . . . .	67, Gracechurch-street, E.C.	Wilson, Isaac Whitwell . . . . .	{ Castle-lodge, Kendal.
Robinson, John . . . . .	Rochdale.	Wilson, William . . . . .	{ Fairbank-villa, Talford-road, Camberwell, S.
Rosher, F. . . . .	{ 72, Mornington-road, Regent's park, N.W.	Young, William Martin . . . . .	4, Warwick-crescent, Harrow-road, W.
Rosher, George . . . . .	54, Oakley square, N.W.	Zachnsdorf, Joseph . . . . .	{ 30, Brydges-street, Covent-garden, W. C.
Roupell, Robt. P., Q.C. . . . .	13, Park-lane, Piccadilly, W.		
Rumsey, W. S. . . . .	Derby-house, Clapham-rise, S.		
Russell, Captain Godfrey . . . . .	{ 103, Albany-street, Regent's-park, N.W.		
Russell, John . . . . .	{ Risca-house, near Newport, Monmouthshire.		
St. George, Brigadier-General, J. . . . .	17, Rutland-gate, S.W.		
Sambrooke, Thomas . . . . .	32, Eaton-place, S.W.		
Samuelson, Martin . . . . .	Scott-street Foundry, Hull.		
Sax, Julius . . . . .	8, Hatton-garden, E.C.		
Schooling, Henry . . . . .	{ 2, Parkfield-villas, King Edward road, Hackney, N.E.		
Scudamore, Frank Ives . . . . .	{ Conduit-vale House, Blackheath, S.E.		
Seaton, W. . . . .	44, Albemarle-street, W.		
Sharman, Alfred . . . . .	{ Mulberry - villa, Walham-green, W.		
Skinner, H. . . . .	25, Coleman-street, E.C.		
Smith, Henry . . . . .	21, Duke street, Edinburgh.		
Smith, Robert . . . . .	23, Fish-street-hill, E.C.		
Spink, Daniel . . . . .	Pyleigh, Bridgewater.		

AND AS HONORARY CORRESPONDING MEMBERS.

Altgelt, Regierungs-Rath A. . . . .	{ Prussian Commissioner for the International Exhibition of 1862.
Beeg, Dr. C. . . . .	{ Bavarian do.
D'Azeglio, His Excellency the Marquis. . . . .	{ Ambassador for Italy.
Del Campo, J. M. . . . .	{ Secretary of the Dutch Commission for the International Exhibition of 1862.
Devincenzi, Commendatore G., M.P. . . . .	{ Italian Commissioner for do.
Di Cavour, Marchese G. B., M.P. . . . .	{ Do do do.
Dietz, Dr. . . . .	{ Commissioner from Baden for do.
Fortamps, Senator F. . . . .	{ Belgian Commissioner do.

Hoene, Geheimer-Ober-	} Prussian do.
Regierungs-Rath.	
Karmarsch, Dr. C. . .	} Hanoverian do.
Koch, Herr . . .	
	} Secretary of Ministry of Commerce, Berlin.
Peterson, George . . .	
	} Russian Commissioner for the International Exhibition of 1862.
Sannicola, Le Chevalier	
Docteur Giovanni . . .	} Naples.
Tidemand, Emil . . .	
	} Norwegian Commissioner for the International Exhibition of 1862.
Villa Maior, Le Visct. de	
	} Portuguese do.
Von Steinbeis, Dr. . .	
	} Commissioner for Wurtemberg for do.
Waern, C. F. . . .	
Wiessner, Regierungs-	} Swedish Commissioner for do.
Rath M. L. . . .	
	} Saxon do.

The following Institutions have been taken into Union since the last announcement :—

Burgh Heath, near Epsom (Mr. Hudson's), Reading-room and Library.  
Hull, Young People's Christian and Literary Institution.  
Isle of Wight (Ryde), Philosophical and Scientific Society

The CHAIRMAN delivered the following

#### ADDRESS.

Having, in compliance with the unanimous desire of the Council, undertaken the duties of their Chairman for another year, I solicit your indulgence whilst for the fourth time I deliver the opening address of a Session.

It has been of late years the custom to bring under the notice of the Society, at the first meeting of the Session, the losses we have sustained in the removal from amongst us, by death, of men distinguished by their position or their services ; but on no former occasion have we had, as we have now, to lament the loss of a member at once the highest in rank and foremost in usefulness—His Royal Highness the Prince Consort, who died at Windsor on the 14th Dec. last. His Royal Highness was elected President of this Society in 1843, and was ever ready to further its undertakings, not only by the influence of his exalted rank, but by (what we valued still more highly) wise counsel and judicious guidance. His distinguished position, his refined tastes, his enlightened judgment, his remarkable candour, his familiarity with general principles, his power of applying the deductions of science to the arts and employments of life, his singular administrative skill, and his special and accurate knowledge on a great variety of subjects, were so employed as widely to extend the influence, and greatly to promote the objects, of the Society. The Exhibition of 1851, with its manifold influences on the progress of industry and art, was the work of the Prince Consort, and in overcoming the difficulties of an undertaking so novel and vast, he solved the problem of conducting exhibitions, and those undertakings will be an enduring memorial of their

author. At his last appearance in this room he occupied the chair, during the reading of a paper, on the International Exhibition of 1862, by my colleague Mr. Hawes ; and he then assured us it was a real privation to him to be prevented, by the avocations and duties of his position, from being able to give the same amount of time and labour to that Exhibition that he was privileged to give to the Exhibition of 1851.

Soon after the death of His Royal Highness a public meeting was held at the Mansion-house to promote a memorial commemorative of his many virtues and expressive of the nation's gratitude, and to that memorial the Council voted the sum of 1,000 guineas, a contribution which was unanimously approved by the Society at a general meeting of the members. The subscriptions collected by the Mansion-house Committee having, for the most part, been limited to the wealthy classes, the Council of the Society, early in the month of April, recommended that suitable means should be taken to make known to the people generally, the character of the memorial which it was proposed to erect, and to afford to all classes of the community the opportunity to take a part, however humble, in what would thus become a national monument. A meeting of ladies and gentlemen desirous of promoting the proposed memorial was held in the Society's rooms, over which the Marquis of Salisbury, K.G., presided ; when it was resolved that arrangements should be made to afford every one who desired it the opportunity of joining in the intended national memorial of affection and gratitude to the Prince Consort, and a Committee was appointed to give effect to the resolutions of that meeting. The appeal then made was extensively circulated, and through the instrumentality of that Committee a sum of nearly £10,000 has been collected, for the most part from the humblest classes of the community.

At a general meeting of the Society, held on the 21st March, the members expressed their further desire to mark their estimation of the great services rendered by His Royal Highness to the Society by having a special memorial for the Society ; and the Council were requested to consider the most appropriate form of memorial, and bring the matter before a meeting of the members at a fitting time. The Council having considered the subject referred to them by the Society, recommend that the memorial shall consist of a marble bust of the Prince, to be placed on a suitable pedestal in this room, the cost being defrayed by the individual subscriptions of members, and that recommendation will be submitted to a general meeting of the members for their approval. The Council having anxiously considered the question by whom the office of President can be best filled, have already expressed their hope that His Royal High-

ness the Prince of Wales will honour the Society by accepting that office.

Meanwhile the members at the last annual meeting made a provisional arrangement by electing to the office of President, Mr. Tooke, the Senior Vice-President, and an old and tried friend of the Society.

Mr. James Walker, an old member of the Society and an eminent civil engineer, was born at Falkirk, in 1781, and, after receiving the rudiments of his education at the parish school of that town, completed his studies at the University of Glasgow, where he obtained much distinction; and where, in later years, he received the honorary degree of Doctor of Laws.

In the year 1800 he came to London, and entering upon the study of his profession under his uncle, Mr. Ralph Walker, acted as that gentleman's assistant in the construction of the West and East India Docks. In 1830 he was appointed engineer of the Commercial Road, and subsequently of the East India Road; and in the year 1806 he became Engineer of the Commercial Docks.

Mr. Walker succeeded Mr. Telford in many of the works of that eminent engineer, and among other important undertakings with which Mr. Walker was connected, may be mentioned the construction of Vauxhall Bridge over the Thames, and the Victoria Bridge over the Clyde; the improvements of the River Clyde; the repairs of the Caledonian and Crinan Canals; the Coffor Dam and River Wall of the New Houses of Parliament; extensive works on the Birmingham Canal, including the Netherton Tunnel; the Leeds and Selby and Hull and Selby Railways; the Pier and Harbour of Granton; the improvements of the Harbour of Belfast, and the construction of the Harbour Works at Dover; the designs for and execution of the Harbours of Refuge at Alderney, Dover, and Harwich; the Tyne Piers; the completion of Plymouth Breakwater; the foundation of the Fort about to be constructed at that place for the War Department; and the various Lighthouse Works of the Corporation of the Trinity House. As a difficult and successful work, the Bishop Rock Lighthouse, off the Scilly Islands, may be placed in the foremost rank of engineering skill with those of Smeaton, at the Eddystone; of the elder Stevenson, at Bell Rock; and of that built at the Skerryvore, by his son, Alan Stevenson.

The Corporation of London for many years consulted Mr. Walker on the various engineering works under their jurisdiction, among which may be named the City Sewers, the navigation of the River Thames, and last, although not the least important, the Thames Embankment, his lines for which are understood to have been adopted by the last commission. He had been largely engaged in extensive drainage operations in

the fens, particularly in the Middle Level; and the magnitude of these operations, by which 90,000 acres of land were effectually drained, is well known. His works were remarkable for their solidity, permanency, and utility.

In habits he was strict and regular; he was eminently a man of business, and his character was marked by a practical sagacity which rendered him on all occasions a sound adviser. In 1834 he was chosen President of the Institution of Civil Engineers, and occupied that distinguished position until 1845.

Mr. Walker had been in the active exercise of his noble profession for a period of 60 years, and although in declining health for the last three years he retained his vigorous intellect to the eve of his death, which occurred on the 8th October, having attained the advanced age of 81 years.

Mr. John Edward Errington, another of our members, was born at Hull. After passing his youth on the Ordnance Survey of Ireland, he became assistant to Mr. Rastrick, who employed him upon the Birmingham section of the Grand Junction Railway. When that line passed into the hands of Mr. Locke, Mr. Errington, as his assistant, had charge of a district. This engagement with Mr. Locke led to a partnership with that gentleman, and together they completed that great system of railway communication which has united the North-Western system at Preston with Aberdeen and the North of Scotland. After Mr. Locke's retirement from the South-Western Railway, Mr. Errington was appointed engineer to the company, and in that capacity completed, shortly before his death, the extensions of that railway in the West of England.

Like his partner (Locke), Errington was chiefly celebrated for his strict regard to economy in carrying out the works under his charge, and this led to his adoption of steeper gradients than those generally used before his time, and resulted in such works as the inclines over Shap Fell and Beattock; but notwithstanding his desire to avoid "engineering triumphs," procured at large cost, Errington has left many fine works to testify to his skill as an engineer, among which may be instanced the Dutton and Vale Royal Viaducts on the Grand Junction; the Lune Viaduct on the Lancaster and Carlisle; the Dillicar and Tebay Viaducts on the same line; the Greenock Docks; and the Honiton Tunnel on the South-Western. Errington died on the 4th July, in his 56th year.

Dr. Hamel, Conseiller d'Etat actuel de S. M. l'Empereur de Russie, Membre de l'Académie Impériale de St. Pétersbourg, who resided many years in England, and who died in London on the 22nd of September, after a few days illness, was one of our oldest corresponding members, having been elected in 1815, and

was a constant attendant at our meetings. He was born in 1788, at Sarepta, on the Volga; distinguished himself early in life by the invention of an electrical machine; and in 1813, was named by the Emperor Alexander member of the "Académie de Médecine et de Chirurgie de St. Pétersbourg." He was appointed to accompany the Grand Duke (afterwards the Emperor) Nicholas, during his visit to England in 1813, and in 1818 he fulfilled the same duties towards the younger brother of the Emperor, the Grand Duke Michael. In 1821 he returned to Russia, and was elected, in 1828, "Membre de l'Académie Impériale de Sciences de St. Pétersbourg." It was through his exertions that the first exhibition of industry took place at Moscow, and he was employed in several other exhibitions in Russia; and, taking the liveliest interest in the progress of industry, he visited all the great exhibitions which have since taken place in France, England, and America. Dr. Hamel published a history of the steam-engine, a work written with the precision and care which distinguished all his scientific researches. He also published in the *Journal of the Society* a history of the electric telegraph, which is very complete and full of interest in a scientific point of view. Having studied during his first visit to England the system of teaching originated by Lancaster, he published an account of it in Russia, and thus became the means of its introduction into that country.

#### EXHIBITION OF 1862.

When we met together at the opening of the last Session, the International Exhibition of 1862, was a vision of the future regarded with hopeful expectation. It has now become a portion of the past, and the rare and costly productions by which it was distinguished are already dispersed, never again to be collected within the same building. In what spirit shall we survey that rich storehouse of skill, and labour, and genius, employed for the use, the delight, and the instruction of man; in part the productions of the industry of our own day; in part the art collections of three generations, comprising, on the one hand, the choicest examples of the world's labour, and, on the other, the most cherished specimens of modern art?

Has the International Exhibition been a failure or a success, a disappointment or a triumph?

In order to answer that question satisfactorily, we must know the objects which International Exhibitions are intended to promote, the benefits they are expected to realise, the moral and social ameliorations they are intended to accomplish.

By no one could the aims of the originators of International Exhibitions be so authoritatively described as by your late Royal President, and

at a public meeting held at the Mansion House in October, 1850, the views which prompted the Prince Consort to originate and direct the Exhibition of 1851 are disclosed in language so impressive, that I desire this evening to recall his address to your attention:—

It must, indeed, be most gratifying to me to find a suggestion which I had thrown out, as appearing to me of importance at this time, should have met with such universal concurrence and approbation; for this has proved to me that the view I took of the peculiar character and requirements of our age was in accordance with the feelings and opinions of the country. Gentlemen, I conceive it to be the duty of every educated person closely to watch and study the time in which he lives, and, as far as in him lies, to add his humble mite of individual exertion to further the accomplishment of what he believes Providence to have ordained. Nobody, however, who has paid any attention to the particular features of our present era, will doubt for a moment that we are living at a period of most wonderful transition, which tends rapidly to the accomplishment of that great end to which, indeed, all history points—the realisation of the unity of mankind. Not a unity which breaks down the limits, and levels the peculiar characteristics of the different nations of the earth, but rather a unity the result and product of those very national varieties and antagonistic qualities. The distances which separate the different nations and parts of the globe are gradually vanishing before the achievements of modern invention, and we can traverse them with incredible ease; the languages of all nations are known, and their acquirement placed within the reach of everybody; thought is communicated with the rapidity, and even by the power, of lightning. On the other hand, the great principle of division of labour, which may be called the moving power of civilisation, is being extended to all branches of science, industry, and art. Whilst formerly the greatest mental energies strove at universal knowledge, and that knowledge was confined to the few, now they are directed to specialities, and in these, again, even to the minutest points; but the knowledge acquired becomes at once the property of the community at large. Whilst formerly discovery was wrapt in secrecy, the publicity of the present day causes that no sooner is a discovery or invention made than it is already improved upon and surpassed by competing efforts; the products of all quarters of the globe are placed at our disposal, and we have only to choose which is the best and cheapest for our purposes, and the powers of production are intrusted to the stimulus of competition and capital. So man is approaching a more complete fulfilment of that great and sacred mission which he has to perform in this world. His reason being created after the image of God, he has to use it to discover the laws by which the Almighty governs His creation, and by making these laws his standard

of action to conquer nature to his use—himself a divine instrument. Science discovers these laws of power, motion, and transformation; industry applies them to the raw matter which the earth yields us in abundance, but which becomes valuable only by knowledge; art teaches us the immutable laws of beauty and symmetry, and gives to our productions forms in accordance with them. Gentlemen, the Exhibition of 1851 is to give us a true test and a living picture of the point of development at which the whole of mankind has arrived in this great task, and a new starting point from which all nations will be able to direct their own further exertions. I confidently hope the first impression which the view of this vast collection will produce upon the spectator will be that of deep thankfulness to the Almighty for the blessings which He has bestowed upon us already here below; and the second, the conviction that they can only be realised in proportion to the help which we are prepared to render to each other; therefore, only by peace, love, and ready assistance, not only between individuals, but between the nations of the earth.

The Exhibition of 1851 gave a true test and living picture of the point of development at which the various nations of the world had then arrived, and served as the starting point from which to measure the progress since made in the pursuits of industry and art.

That Exhibition presented the most extensive and valuable collection of objects of industry ever before contained in a single building; and it appears from the official returns that the number of exhibitors was 13,937, of whom 7,381 belonged to Great Britain, with her colonies and dependencies, and 6,556 to foreign nations. And these numbers did not include India, Turkey, Egypt, and Tunis. From estimates supplied by the exhibitors, the total value of the objects exhibited was thus given:—

United Kingdom . . . .	£1,031,607
Colonies and Dependencies . .	79,901
Foreign Countries . . . .	670,420
	<hr/> £1,781,928

This estimate was exclusive of the Koh-i-Noor diamond, to which it was difficult to assign a marketable value.

I have said that the Exhibition of 1851 gave a true test and living picture of the world's industry at that period, whether indicated by the raw material, or the finished products of the various countries represented on that occasion; and comparing that Exhibition with the one which has just closed, what should be our estimate of the progress made in the intervening period, brief as it is if regarded as a portion of the age of man—briefer still if contrasted with the duration of national life?

Progress is of two kinds, and may mark the

onward march of advancing civilisation, or the gradual decline and ultimate decay of the living energies, whether of nations or individuals. The age in which our lot is cast is distinguished by great intellectual activity, by the general diffusion of knowledge, by numerous and important discoveries in science, by the application of the arts of design to the productions of industry, and by the diminution or removal of grave social ills. The results of such an age should be a steady advance in national prosperity, an onward progress in every department of industry, a marked improvement in the productions of skill and labour; and all these results are, I think, fully manifested in the Exhibition of 1862; whether regard be had to the number and the quality of the objects exhibited, or to the countries by which those objects were contributed.

In any estimate of the Exhibition a high place must be given to the machinery which was collected in the building, whether as regards the multiplicity of the objects, the excellence of the workmanship, or the accuracy of the component portions of the machines. Comparing this department of the undertaking with the machinery exhibited at our own Exhibition of 1851, or the Paris Exhibition of 1855, the great and rapid progress made in the perfection of our mechanical works was indisputable. The jury who examined this class of objects did not, as I believe, recognise any discovery of importance in the science of mechanics, although they witnessed novel applications of mechanical power; and the beauty, the finish, the precision, the power, and the efficiency of many of the steam engines, created astonishment in those who were unacquainted with the advance which this branch of mechanical skill and industry has recently witnessed.

The marine engines especially exhibited a concentration and economical employment of power, a simplicity and compactness of form and arrangement, a precision of action, and an accurate combination of their various portions, which place them in the foremost ranks of mechanical production; and in this department of construction we occupy the position which ought to be maintained by the first of maritime nations.

I am not in possession of official returns of the number of exhibitors in the present year, nor am I acquainted with any trustworthy estimate of the value of the objects exhibited; but instead of 13,937 exhibitors, as in 1851, the number in the present year has, I believe, exceeded 25,000, of which the foreign exhibitors, who, in 1851, numbered only 6,536, have amounted in the present year to 16,000. These numbers do not include the exhibitors of works of fine art, whether painting or sculpture, in which departments 6,000 objects were exhibited. Whilst the increase in the number of exhibitors has been



so large, it will be conceded by all to whom both Exhibitions were familiar, not only that the recent Exhibition as a whole far exceeded in interest, beauty, and value that of 1851, but that in almost every department of industry the improvement in the present year's Exhibition was very remarkable. That improvement must be attributed, doubtless in a large measure, to the characteristics of our age, the competition engendered by active rivalry, national and individual, art culture, increased intelligence, and the improved education of the artisan. But a share, and I believe a large share, of that improvement may be claimed for the Exhibitions of 1851 and 1855, and we may confidently expect that the recent Exhibition will not be less fruitful than its predecessors in those lessons which contribute to beauty of design, to an appropriate selection of material, to excellence of workmanship, and to economy of labour; and which enlist the aid of science and art in the pursuits of industry.

The capitalist, by travel through various countries, and by intercourse with the scientific and industrious classes in many lands, may acquire the knowledge necessary for the profitable conduct of his own affairs. The working man has no such opportunities for the culture of his faculties; and to enable him to benefit by the labour and skill of others their productions must be collected for his inspection; and it is scarcely possible to estimate too highly the importance to the industrial classes of such Exhibitions as that which has just closed. Educated or trained for special labour, confined to a narrow circle of observation, habituated to a definite and unvarying handicraft, it is most important that we should enable our artisans to observe the works of other men and other countries than their own; and to discern the methods employed to accomplish results with which they are familiar, but which they have attained by different processes. The knowledge they thus acquire should advance their skill, improve their taste, and enlarge their faculties. By these influences their intellectual character is raised, they are removed from those sensual indulgences by which they are often shipwrecked, their moral nature is purified, they are elevated in social position, and their self-respect is cultivated and strengthened. In this Society, founded for the Encouragement of Arts, Manufactures, and Commerce, it is fitting to indicate how exhibitions of Industry and Art are calculated, in an especial manner, to benefit those who are engaged in the pursuits of industry. Nevertheless, we ought not to overlook the interest which the recent Exhibition excited in other classes, who visited it in great numbers, and to whom the works of fine art, no less than the products of industry, afforded great gratification.

The number of visits made to the building between the 1st day of May and the 1st day of November, amounted to six millions two hundred thousand, which is only a slight increase on the number of visits made to the Exhibition of 1851, and is below the number anticipated in the present year. Several causes have contributed to this disappointment, and we may especially mention two great national calamities—the death of the Prince Consort, and the wide spread distress in our cotton districts; a distress by which a large proportion of the population engaged in, or dependent on, that branch of industry, and who visited the metropolis in great numbers in 1851, was prevented by want of means from seeing the late Exhibition.

I cannot detail with any precision the financial results of the Exhibition, but I understand the money paid for admission on this occasion has amounted to £409,000, whilst the receipts for admission in 1851 were £423,792, including in each instance the payment for season tickets.

I have no official knowledge of the expenditure of the Commissioners, but I am informed that the claim on them for the services of the police force exceeds £19,000; a subject to which the attention of the members of the Society, as well as the public, should be directed, in order that it may be brought under the consideration of the Home Secretary, by whom certain powers of control and superintendence are exercised in relation to the police force. In France and other European countries industrial exhibitions have been undertaken at the risk of the Governments; and in Spain, as well as Turkey, where proposals have been made for holding Exhibitions next year, the Governments will no doubt assume the risk. In 1855 Parliament voted £50,000, of which £40,000 only was expended, to assist English exhibitors in sending their goods to, and displaying them and providing for their safety in Paris; and in 1851 a sum of £67,896 was subscribed by the public towards the expenses of that Exhibition. No contributions from the Government, or subscriptions from the public, are now sought, but the preservation of public order, and the protection of property, at an exhibition promoted on public grounds, and calculated to ensure important public benefits, ought assuredly to be undertaken by the police authorities, whose funds are in part raised by assessment on the metropolitan parishes, and in part contributed from the Consolidated Fund.

To ensure the periodical recurrence of international exhibitions has been the aim of this Society, and it was intended in the first instance that they should be held quinquennially. The first charter granted to the Commissioners for the Exhibition of 1851, recited the formation by this Society of annual exhibitions of the works of

British Art and industry, and their proposal to establish an enlarged exhibition of the works of Industry of all Nations to be held in that year; and our late Royal President, at the close of that Exhibition, acknowledged the obligations of the Royal Commissioners and the public to the Society for having carried out the preliminary arrangements for that Exhibition to an extent which justified the Prince Consort, as our President, in the application he made to the Crown for the issue of a Royal Commission. It seemed natural that the Society, which undertook the preliminary arrangements for the first International Exhibition, should originate a second, especially as it was known that the Commissioners for the Exhibition of 1851 would not assume the responsibilities of the undertaking. On the invitation of your Council, the noblemen and gentlemen named as Commissioners for the Exhibition of 1862, agreed to assume the management of the undertaking;—after a guarantee had been promised to such an extent as to show a strong opinion in the public mind that the time for holding a second International Exhibition had arrived; after the guarantors had expressed an opinion that the absolute control of the undertaking ought to be entrusted to five gentlemen named by the Council; and after the Commissioners of the Exhibition of 1851 had intimated their approval of the project and their confidence in the proposed mode of management, and had promised their support and assistance. On the petition of the Society a Royal Charter of incorporation was granted to the Commissioners, and a guarantee deed was executed for the aggregate sum of £448,460, for the most part by members of the Society. I have entered into these details, because it seems to have been thought, in some quarters apparently uninformed of the true state of the case, that the Society, in originating the recent Exhibition, had intruded into the labours of others willing to undertake the task which the Society has discharged; whereas, it may be confidently affirmed that, but for this Society, the year 1862 would have witnessed no International Exhibition.

Whilst, however, I claim for this Society whatever merit may belong to the work they have performed, I would add that, but for the counsel and assistance which was afforded them by their late Royal President, it would have been difficult, if not impossible, to overcome the obstacles in their path, or to reconcile views in influential quarters which were conflicting and full of embarrassment.

With the view of placing before the public the most authoritative and permanent record of the Exhibition, the Council undertook the publication of the reports of the several juries, descriptive of the progress of industry since 1851, and it is a subject of regret to the Council

that those reports were not completed before the close of the Exhibition. The Council were assured that all the reports would be in the hands of Dr. Playfair, the Special Commissioner of the Juries, early in the month of August. The month of September, however, arrived without the reports being completed, and the Council then determined to issue to the subscribers all which had been received, with an intimation that when the remaining reports shall be supplied, the Society will exchange the parts issued, if uninjured, for the completed volume. This publication was undertaken by the Council with the sanction of Her Majesty's Commissioners (who provided only for the publication of the awards of the juries), and is under the charge of Dr. Lyon Playfair, to whom the official reports are transmitted by the several juries.

Much difference of opinion has prevailed with respect to the policy of distributing medals or other marks of distinction to exhibitors, on the awards of juries appointed to consider the merits of the objects exhibited, and to recommend rewards for excellence, whether in design, workmanship, or economy of production, for novelty of invention, for novelty combined with utility in the employment of materials, for improved processes of manufacture, or for other substantial improvements. In order to aid in the formation of a sound judgment on this difficult question, the Council have transmitted a circular letter to Jurors, Special Commissioners, and Exhibitors, inviting their opinions on the questions—whether rewards for merit, by medals or otherwise, are desirable in International Exhibitions; and whether a better method than the appointment of Juries can be suggested for making the awards; and it is the intention of the Council to embody the answers which they have received in a public report.

The Commissioners for the Exhibition of 1862, who have gratuitously discharged laborious and responsible duties, have met, as it seems to me, with but scant justice from some of the organs of public opinion. That they may have sometimes miscarried is very probable, and although their nomination by the Council was entirely approved by the Guarantors, neither the one nor the other expected that the management of Her Majesty's Commissioners would be so faultless as to disarm hostile criticism; and I ventured, early in the progress of their proceedings, to intimate that their task would probably prove a thankless one.

In surveying the late Exhibition, we are saddened by the absence of the illustrious Prince who was so conspicuous on all occasions in 1851, whose personal qualities conducted in so eminent a degree to the success of that undertaking, and who, not long before his departure hence, conveyed to us the assurance of his deep interest in that Exhibition, to the success of which his

presence and encouragement would have largely contributed. But although he was not permitted to guide by his counsel, or to aid by his presence, the labours of Her Majesty's Commissioners, or to promote, by his exertions and patronage, the success of the Exhibition of 1862, I may recall the enlightened spirit and admirable temper which characterised his presidency in 1851, by repeating the concluding words of his address to Lord Canning at the close of that Exhibition, applicable alike to this as to that occasion :—

In now taking leave of all those who have so materially aided us in their respective characters as Jurors and Associates, Foreign and Local Commissioners, Members and Secretaries of Local and Sectional Committees, Members of the Society of Arts, and Exhibitors, I cannot refrain from remarking, with heartfelt pleasure, the singular harmony which has prevailed amongst the eminent men representing so many national interests—a harmony which cannot end with the event which produced it. Let us receive it as an auspicious omen for the future; and while we return our humble and hearty thanks to Almighty God for the blessing He has vouchsafed to our labours, let us all earnestly pray that that Divine Providence which has so benignantly watched over and shielded this illustration of nature's productions, conceived by human intellect and fashioned by human skill, may still protect us, and may grant that this interchange of knowledge, resulting from the meeting of enlightened people in friendly rivalry, may be dispersed far and wide over distant lands; and thus, by showing our mutual dependence upon each other, be a happy means of promoting unity among nations, and peace and goodwill among the various races of mankind.

#### EXAMINATIONS.

The 11th Annual Conference with the Council of the Society of the Representatives of the Institutions in Union, and the Local Educational Boards, was held at the Society's House, on the 23rd June; and the report of the Secretary, embodying the results of the Society's Examinations for the present year, was laid before the meeting by the Council.

The final Examinations were conducted at 81 places, or centres of examination, and it appeared from the returns of the Local Educational Boards that 903 Candidates had presented themselves for the previous examination, of whom 773 passed that examination in a satisfactory manner. At the final examination 815 Candidates were examined, and 668 received certificates that they had passed a satisfactory examination in one or more of the 29 subjects for which the Society's Prizes are offered. Of the Candidates at the final examination, 637 were examined in England and Wales, 175 in Scotland, and 3 in Ireland.

The number of papers worked by the Candidates was 1,217, and the number of certificates

awarded 942, of which 239 were of the first class, 372 of the second class, and 331 of the third class. 19 first class prizes of £5, and 16 second class prizes of £3, the gift of the Society, were awarded to successful Candidates; and additional prizes, 8 in number, of the value of £11, the gift of individual members, were awarded for meritorious papers in Practical Mechanics, English History, and English Literature.

In ten subjects of examination no prizes were awarded, and in three other subjects no second prize was awarded; and 26 prizes offered by individuals were not taken.

The number of Candidates who failed was 147, and the number of papers worked, for which no certificate was awarded, was 275.

Success and failure presented the same relation to Candidates and papers in the last as in the present year, namely :—

	Candidates examined.	Failures.
1861 .....	750 .....	133
1862 .....	815 .....	147
	Papers worked.	Certificates awarded.
1861 .....	1,079 .....	842
1862 .....	1,217 .....	942

The following table represents the gradual but steady increase which has taken place in this work of the Society during the last four years :—

	Number of Candidates.	Papers worked.
1859 .....	480 .....	766
1860 .....	586 .....	821
1861 .....	750 .....	1,079
1862 .....	815 .....	1,217

The reports of the Examiners, which have already appeared in the *Journal*, indicate an improvement in the quality of the papers worked in some important subjects, but the number of candidates who offer themselves for examination in those studies which are closely connected with the pursuits of artisans and handicraftsmen, presents no such substantial increase as to realise in this respect the hopes of the Council.

The subject of Animal Physiology in relation to health elicited a large increase in the number of papers, from five last year to 40 this, but the Examiner remarks that no papers approached in merit the highest of those written last year, and no prize was awarded for any paper on that subject sent in this year. The subject of Agriculture was limited to a single paper, and no prize was awarded, whilst in Botany, in connection with the practice of Horticulture, the number of papers was very limited, and no second prize was given; and in Political and Social Economy the Examiner observes, that the standard of the Candidates was below anything he had seen before in these examinations. I have on former occasions indicated the importance to the citizens of a free State, largely entrusted with the responsibilities of self-government in the various departments of local and

general administration, of a careful study of the language, literature, and history of their own country; and the regret I entertained that our students do not familiarise themselves in greater numbers with subjects of such great importance and deep interest. It is satisfactory on this occasion to observe a considerable increase in the number of papers on English History, from 46 last year to 80 in this, and it is some compensation for a reduced number of papers on English Literature, that every one of the Candidates passed (a good proportion being in the first class), and that they generally manifested a sound acquaintance with the text of the authors in which they were examined. The first prize for English Literature was awarded to Elizabeth Fulford, aged 18, of the Birmingham and Midland Institute. It would be very profitable to our students to consider well the observations of the Examiner in English History, who had presented to him a larger proportion than usual of papers of inferior merit; and who remarks:—"Vague, or inaccurate knowledge, is worse than useless. It is no sufficient answer to say that Magna Charta is the first bulwark of English liberty, without specifying any of its provisions. Those who intend to offer themselves for examination next year, will do well to practise themselves in writing answers, without books, to old examination papers. Accuracy, and thoughtfulness, are the two qualities that tell most in all examinations, and both are best perfected by exercise."

The Council were authorised last year to notify the intention of His Royal Highness our late President to offer annually a prize of 25 guineas to the Candidate who, obtaining a certificate of the first-class in the current year, should have obtained in that year, and the three years immediately preceding, a greater number of such certificates than any other Candidate. To win that prize is the highest distinction within the reach of the Candidates for the Society's rewards, and it has been awarded this year to Mr. J. G. Greenhough, of the Bradford Mechanics' Institute, a mercantile clerk, aged 19, who has received from the Society the following certificates:—

- 1859. Arithmetic (1st class), Algebra (3rd class).
- 1860. English History (1st class), Geography (1st class).
- 1861. English Literature (1st class), Algebra (2nd class), Geometry (2nd class), Trigonometry (3rd class).
- 1862. Algebra (1st class), Trigonometry (2nd class), Geometry (1st class, with 1st Prize).

Few circumstances can better show the advantages of adult study than the progressive advancement of this young man in the knowledge of those subjects to which his time and thoughts have been devoted with exemplary patience and industry; and no better proof could be afforded of the value of the prize offered by our late Royal President than that it should be won by so deserving a student, and become the

stimulus, it may be hoped, in other instances, to equal application and perseverance.

Her Majesty the Queen has been graciously pleased to signify her intention to continue annually the prize founded by His Royal Highness, whose name and memory will thus be directly connected with the efforts making by the Society to diffuse amongst the industrial classes that intelligent knowledge of the arts of production which it was the constant aim of the Prince to encourage and extend.

In my last address mention was made of the formation of a Central Committee of Educational Unions in connection with the Society, with the object of promoting uniformity of action and a fixed standard in the elementary and preparatory examinations held by various bodies in connection with the Society. That fixed standard is ensured by the employment in every Union of the same examination papers, and these are provided by the agency of the Society.

These uniform papers were first used in the spring of this year, in the elementary examinations held at Aldershot, Hertford, Leeds (the Young Men's Christian Association), the West Riding Educational Board (five centres), and the Southern Counties Adult Educational Society (35 centres). Candidates were classed in two divisions, senior and junior, of whom 308 entered the junior division, and 157 passed a satisfactory examination, and 118 entered the senior division, and 71 passed satisfactorily. The advantages of having uniform papers and a uniform standard for certificates is so obvious that, it is hoped, they may be extensively employed in future years.

The endeavours which have been made to prolong the school life of the children of the labouring poor have met with but partial and limited success, and it may be doubted whether the tendency of late years has not been to accelerate the removal of such children from school to work, and thus to shorten the continuance of school life. The report of the Education Commissioners, presented to Parliament in 1860 showed that the attendance of scholars diminishes rapidly after 11, and ceases almost wholly at 13, as only 5 per cent. of the children at our day schools are over that age. Whilst upwards of two millions of the children of our working men (95 per cent. of that number being under the age of 13) receive daily instruction in our schools, hundreds of thousands of those children exchange a school life for one of labour every year. Institutes, evening schools, with classes for systematic instruction, supply the only means whereby the instruction given to the child in the day-school can be preserved and extended in the years of boyhood and early manhood, and hence the importance of that branch of the operations of the Society which encourages the instruction of

adult students in affording to all the opportunity, by suitable examinations, of testing their knowledge, discovering their defects, and obtaining those distinctions which the certificates and prizes of the Society confer on the deserving and meritorious student.

A recent number of the *Times* contained a report of the proceedings of a meeting (at which Lord Stanley presided) on the occasion of the opening of a new Mechanics' Institution, at Stockport, and in a leading article of the same journal are the following comments on the agency of the Society in the work of Examination :—

“ Lord Stanley speaks with the greatest praise of the Examinations conducted, at regular periods, by the Society of Arts, by the local institutional associations of Lancashire and Cheshire, and by middle-class schools. It is, no doubt, very desirable that the efforts of those associations for middle-class education should be periodically tested, and we have no objection to the Society of Arts, or any other society, undertaking that office, so long as it is clearly understood that no privilege or advantage whatever is to be given at the public expense to the successful candidates for the Society's prizes. The Society of Arts is a very respectable (and may, for aught we know, be a very learned) body, but we have yet to learn on what grounds it claims the right to constitute itself the public examiner of the middle classes of England, or to hold out Government prizes as objects of temptation to those who choose to submit to their authority.”

I have noticed that article, not with any desire to complain of its temper or spirit, but simply to correct a mistaken impression which appears to prevail with respect to the position of the Society; and to negative the assumptions that it claims the right to constitute itself the public examiner of the middle classes of England, or to hold out Government prizes as objects of competition to those who choose to submit to its authority.

When in 1852 the Society established its Union of Institutions, one of its principal objects was to encourage those bodies to become places for the systematic instruction of adults engaged in the arts of industrial production: and in 1854, at a conference of the representatives of the associated institutions, the Society was invited to conduct systematic Examinations in various branches of knowledge, and to distribute certificates to those Candidates who, being presented by the institutions in union, should give proof of their intelligent acquaintance with the subjects in which they might request to be examined. These Examinations, it need scarcely be said, are purely voluntary on the part of the Candidates, who are all connected, directly or indirectly, with our Society, being, for the most part, members of affiliated Institutions, and being, without any exception, presented for examination by one of its local Boards. The Society derives no pecuniary advantage from the labours it has undertaken, but expends monies from its own funds in the work of Ex-

amination, and in rewards distributed to the most distinguished candidates. The Society does not hold out Government prizes as objects of competition to those who choose to become Candidates for the rewards it distributes. It is true that members of recent administrations, constituted of different political parties, have occasionally placed at the disposal of the Council a small number of nominations which have been presented by them to Candidates who distinguished themselves at the Society's Examinations. Those nominations are not to offices, but simply entitle the holders to the privilege of competing for office; the candidates present themselves for a competitive examination to the Civil Service Commissioners, and, if successful in such examination, are presented to clerkships in some public department.

The only effect of these acts of kindly recognition of humble merit, by the ministers of the Crown, has been the admission of young men, who have shown that they possess recommendations which qualify them for useful service, to compete for public employment with gentlemen, nominated for the most part by the political supporters of the government of the day. I believe I am correct in saying that every prize student, who has been recommended by the Council, has been approved by the Civil Service Commissioners and appointed to the situation for which he competed; and that more than one has been promoted for good conduct in the office to which he was appointed.

I will not dismiss this subject without naming the ministers who have presented those nominations and who were Earl Granville, the Earl of Derby, and Viscount Palmerston, to whose names must be added that of Mr. John Wood, a former Chairman of the Inland Revenue Board.

Those who are most familiar with the subject of adult instruction, best know the immense difficulties which obstruct that work; and if any one is tempted to complain, that the progress made by the Society is less rapid than could be wished, he may be consoled by the assurance, that, in many large portions of the United Kingdom, this Society has stimulated the use of means, and has supplied motives for the systematic instruction of youths and adults over 16 years of age; whilst it has also called into action and assisted to organise and methodise, in the hands of bodies connected with the Society, suitable means for continuing the instruction of children at that critical period of their lives, which intervenes between the age of 12, when the children of the poor usually leave school, and that of 16, when as adults the Society's own examinations are open to them.

COPYRIGHT IN WORKS OF FINE ART.

It will be in the recollection of many of the

members of the Society, that in the session of 1857-8, a Committee was appointed by the Council to inquire into the subject of copyright in works of the fine Arts, of which Sir Charles Eastlake, the President of the Royal Academy, was appointed Chairman. That Committee reported that the laws of British artistic copyright were defective and unjust because they afforded no sufficient protection to artists against the piracy of their productions, and no redress to purchasers for the invasion of their property; that, by reason of the defective state of the law, direct encouragement was given to an extensive manufacture of spurious works, which were sold as originals, and injustice inflicted on the subjects of foreign states who had entered into International copyright conventions with her Majesty, and whose works were not protected from piracy in British territories, while protection was afforded in such states to the works of British artists. A bill to establish Copyright in works of the fine arts was thereupon framed under the direction of the Committee, and received the sanction of the Council, who, in the session of 1860, by means of a deputation to Lord Palmerston, sought the aid of the government in passing that Bill.

The state of public business prevented the introduction of the Bill during that session, but in the course of the last year the Bill was introduced into the House of Commons by the Attorney-General (now the Lord Chancellor), who devoted a large amount of valuable time to the revision of the Bill originally approved by the Council, but his Lordship's bill only proceeded to a second reading by reason of the pressure of public business. The Council conferred on the subject with the Lord Chancellor before the commencement of the last session of Parliament, and were informed by him that the Solicitor-General would be authorised to take charge of the Bill as a government measure, and they were advised to modify and limit the provisions of the Bill which had been introduced in the former session, in order to facilitate its progress through the Legislature. The law as it then stood conferred a copyright in engravings and works of sculpture, but none existed in paintings, drawings, or photographs; and it was the object of the Council to consolidate and amend the law of copyright with respect to engravings and works of sculpture, as well as to confer on artists a copyright in paintings, drawings, and photographs. The Council, acting on the advice of the Lord Chancellor, omitted from the Bill the provisions for a consolidation of the law of copyright in works of the fine arts, and confined its provisions to the creation of a copyright in paintings, drawings, and photographs, to continue for the natural life of the artist and seven years after his death.

The Bill thus altered was introduced into the Commons by the Solicitor-General, and passed through that house with some amendments; and after being considered by a Select Committee of the Lords, received the sanction of the legislature, and is now printed in the Statute Book under the title of "An Act for amending the law relating to Copyright in works of the Fine Arts and for repressing the commission of fraud in the production and sale of such works."

Is it not strange that, until the present year, our laws should have given no protection to artists in the enjoyment of works of the highest genius and the most brilliant imagination; and that, although we acknowledged the natural and undisputed right of the rudest industry to the enjoyment of its productions, we disregarded the claims of men whose labours have afforded mankind some of the highest and purest pleasures? The Council congratulate the Society on the success of their efforts to redress the injustice inflicted on artists by a defective state of the law, and they desire to acknowledge their obligations to those members of both Houses by whom the claims of artists were advocated; they would especially instance the Lord Chancellor and Lord Granville in one House, and the Solicitor-General, the Right Hon. Spencer Walpole, and Mr. Rolt, in the other,—all of whom laboured assiduously to ensure to artists the due reward of their genius and industry. Our acknowledgments are likewise due to Mr. Spencer Vincent and Mr. Edwin Field, for the valuable services rendered by them in the preparation and progress of the Bills submitted to the legislature; and to Mr. Robertson Blaine, by whom a very accurate and comprehensive report on the laws affecting copyright in the Fine Arts was prepared at the request of the committee appointed by the Society, and who drew the Bill for consolidating the law of copyright which was approved by the Committee and sanctioned by the Council.

#### COTTON MANUFACTURE.

The deplorable paralysis by which the great staple manufacture of cotton has been smitten, the destitution and suffering of that large class of the population engaged in, or dependent on, the production of cotton goods, and their admirable deportment under privations such as the present generation has not before experienced, have excited the sympathy and won the admiration of all classes of the community. That they will be provided with food and clothing, and supplied with everything needful for their bodily health, to whatever period the cessation of their employment may be prolonged, I cannot doubt; because, unless this provision be made, the nation will not perform its duty to men who are willing and anxious to work, and who have been reduced

to destitution by no fault of their own. But, although it will be necessary for the present to resort to the accumulated capital of past years, in order to feed and clothe men and women to whom employment cannot be supplied, the great end and aim of all, who can contribute to the solution of the problem, will be to provide a supply of suitable raw material on which they can be set to work.

Our embarrassment has been caused by our dependence for the raw cotton on one country—the States of America—whence our imports in 1860 exceeded 100 millions of pounds, whereas our imports from all other countries did not exceed 30 millions. The Council of this Society have perseveringly directed the attention of our manufacturers to the danger of depending so largely on the American States for a supply of raw cotton, and to the extensive fields for the culture of cotton which exist in almost every quarter of the globe.

In the session of 1845-6, a paper was read in this room by Mr. James Banks, on the cotton of Honduras and Yucatan, and on free-labour cotton from Africa and the East Indies, and the attention of our members and the public has since that time been perseveringly directed to the capabilities of India, Australia, Egypt, South Africa, and South America, to grow cotton for the English market. Amongst other able papers on the subject may be mentioned those of Mr. J. Crawford, Mr. Ashworth, and Mr. Leonard Wray.

Dr. Forbes Watson, who read papers on "The Growth of Cotton in India" in the Sessions of 1858-9 and 1859-60, estimated the quantity of cotton grown in that country at upwards of 2,400 millions of pounds, or more than double the average consumption of this country. It has been objected that the Indian cotton sent to this country has been short in fibre, and otherwise so inferior in quality as to be unfitted for the English manufactures. Nevertheless, in the last century the finest muslins were manufactured in India in large quantities for importation into this country, and chintzes and calicoes were brought from that country to this for consumption, whilst the raw cotton of India and China was extensively employed in the manufacture of nankeens to be used in England. The interests involved in the cotton manufactures of Great Britain are of an importance which can scarcely be exaggerated, and hence the deplorable consequences of what has been truly called a cotton famine. According to official returns, the value of the raw cotton imported into this country in 1860 was £35,756,889, and of the raw cotton exported £5,388,190, so that the value of the cotton retained for home consumption exceeded 30 millions sterling. The value of the twist and yarn

exported in that year was estimated at nearly 10 millions, and of cotton fabrics in various stages of manufacture at upwards of 42 millions, and if 18 millions be added for the value of the cotton fabrics consumed at home, which is probably less than the actual cost, the gross value of the produce of our cotton manufactures amounted to 70 millions in the year 1860. In a paper of Mr. Redgrave, one of Her Majesty's Inspectors of Factories (who read papers of much interest in the years 1860-61 before this Society, as well as before the Statistical Congress, on our textile fabrics), he supplied the following estimate made for the year 1856 with respect to the numbers of the population employed in or dependent on the cotton manufacture within the United Kingdom:—

Number of persons employed in }	
factories . . . . . }	379,213
Do. do. out }	
of factories . . . . . }	370,787
Do. do. de- }	
pendent on the above. . . . }	1,350,000
	<hr/>
	2,100,000

Mr. Redgrave estimated the wages of the persons employed in cotton factories at nearly 10 millions sterling; and if an equal sum be estimated for the wages of those employed on cotton goods out of factories, the gross yearly sum paid in wages may be set down at 20 millions.\*

#### THE COLONIES.

Our colonial possessions, including the dependencies of the empire, have attracted a large share of the attention of this Society, and it has been for many years the aim of the Council to collect and diffuse accurate information on the products and resources of countries many of which are peopled by men of our own race and language, spread over a large portion of the surface of the globe. How remarkable has been the growth of many of our colonies during the last 10 years in every element of prosperity, and how full of interest were the indications of their progress in the recent Exhibition.

Metals of every description, from the costly gold to the humble but in some respects more valuable iron, coal fields of great extent, timber of great variety and extraordinary beauty, grain, and other articles of food of the very finest quality, live stock in great abundance, wines, described as of a high class, wool in large quantities, cotton of the finest fibre and texture, are amongst the productions of our colonies, with which we have been made familiar by the specimens forwarded to the Exhibition. No single object in the Exhibition excited more

\* The number of able-bodied males employed in cotton factories in Lancashire is given at 89,041 only in a Parliamentary paper of last session.



attention than the pyramid under the eastern dome, designed to show the small space occupied by the gold exported from Victoria, in the ten years ending 1st October, 1861, which in weight approached 800 tons, and in value 105 millions sterling. The results of the Exhibition must be highly beneficial to the Colonies, inasmuch as the numerous visitors, home and foreign, have had visibly presented to them the amazing variety and the great value of their productions. In papers on the British Colonies, contributed to the *Journal* by Mr. P. L. Simmonds, in the course of last year, it is shown that the aggregate population of our Colonies and Dependencies is 195 millions; their imports and exports, 176 millions; their revenue, 44 millions; and their imports from the mother country, 46 millions. Nevertheless it is maintained, by a certain school of economists, that those possessions are a burden and not a benefit to the home country. The questions involved in the possession and rule of Colonies may be regarded as within the domain of political rather than economical science, and the union of ships, colonies, and commerce, has hitherto been proclaimed as an important element in the growth and grandeur of nations.

The use of colonies in ensuring the means of regular and constant emigration was ably advocated before the British Association, at their recent meeting, by Mr. Herman Merivale, and the benefits of continued and regular emigration was shown by a comparison between the progress of population in this country and France. By colonisation England has become the founder of orderly, intelligent, and industrious communities, by whom the arts, the language, the domestic habits, as well as the faith and worship of the home country, have been preserved and extended. Situated in every quarter of the globe, placed under almost every parallel of latitude, characterised by the utmost diversity of climate, they produce the raw material required for our manufactures, and offer markets for the produce of our looms, and whatever else may be contributed by our arts and industry.

The Council have agreed to renew the lease of this house, in which the meetings of the Society have been held for nearly a century, and which is associated with recollections, sometimes of success and sometimes of failure, in labours of a very varied character. The possession of these premises has thus been secured for 35 years, on terms which the Council regard as favourable. They must soon consider by what alterations the building can be rendered more adequate to the wants of the Society than it has recently been found, and it will be the aim of the Council to render our library more useful to the Society by providing such additional accommodation as will make the books more easily accessible to the members.

The annual exhibition of patented mechanical inventions has been inconveniently limited for want of space in this building, and the exhibitions have not kept pace with the progress of science, and have not been worthy of the present position of the Society.

There was no exhibition in the rooms of the Society in 1852, and, acting on that precedent, the Council do not propose that an annual exhibition shall be held in the next year.

The Council desire me to acquaint you that the following papers will be read before Christmas at our evening meetings:—

November 26.—“On the Utilization of Peat, with Reference more Particularly to the Manufacture of Hydro-Carbon Oils.” By B. H. Paul, Ph.D.

December 3.—“On Thompson's Process of Boatbuilding by Machinery.” By D. Puseley. Illustrated by models.

December 10.—“On the Construction of Labourers' Cottages and Sanitary Building Appliances.” By John Taylor, jun., architect. On this evening Major-General Tremenhare will preside.

December 17.—“On the Mines and Minerals of the United Kingdom.” By Robert Hunt, F.R.S., Keeper of Mining Records, Government School of Mines.

Three silver medals were awarded by the Council for papers read before the Society during the last Session, at their evening meetings; and it will be an agreeable portion of this evening's duties to deliver those medals, as well as the prize of the Prince Consort, in accordance with the awards of the Council.

From the formation of this Society it has sought to stimulate inventions and encourage the application of science to the arts of production by the offer of premiums on a variety of subjects. Those premiums have been varied from time to time so as best to meet the wants of each period, and to promote the objects for the encouragement of which the Society was founded; and the Council propose, in the course of the Session, to issue a revised list of premiums to be offered by the Society.

In former addresses I have indicated the important services which may be rendered to the Society by our members, including, as they do, a large number of men distinguished in art or science, and possessed of qualifications of a very varied nature, eminently calculated to promote the ends and aims of the Society. And it is the intention of the Council to seek to enlist the services of those members who are willing to take a part in the work of the Society, by assigning special departments of investigation to members classified with relation to subjects with which they have been familiarised by their callings or studies.

The revision of the list of premiums is a work to which the members may usefully contribute from the familiarity of many of their number with the applied sciences and industrial arts, which it is the special business of this Society to encourage.



The Council do not, however, rely on their members alone for assistance and co-operation. They gratefully acknowledge the services of the Board of Examiners and of Committees specially constituted for investigations of an important character, and who contribute largely to the usefulness of the Society.

To a Society for the Encouragement of Arts, Manufactures, and Commerce, abundant means of usefulness are offered in our day and country, but it is only by employing the opportunities afforded us in a spirit of wisdom and persistent activity, that we can retain the public sympathy and confidence. That we have earned that confidence, is shown by the unexampled growth of our numbers from a little over 300 in 1845 to nearly 3,000 at the present time.

May our labours be directed to the advancement of science and its extended employment in the pursuits of industry, and to the cultivation of the arts which minister to human happiness, and thus, in the language of Lord Bacon, we shall best advance the glory of God and the welfare of man's estate.

Vice-Chancellor Sir WILLIAM PAGE WOOD rose to move that the thanks of the meeting be given to the Chairman for the interesting and excellent address he had just delivered. He would be very brief in his remarks, as there was other business to transact; but there was one remarkable feature in that address which forced itself upon his mind, and that was, that it had been well shown how intimately connected was the name of the revered Prince Consort with most of the really valuable and important operations of the Society, from the very beginning of the address, where His Royal Highness was spoken of as the promoter of the first Great Exhibition in this country, down to that passage where allusion was made to the examination prize which was about to be delivered to the young man who so richly deserved it. Most thankful must they all feel that in considering the proposition for a national memorial to that illustrious Prince they did not allow "the native hue of resolution" to be "sicklied o'er with the pale cast of thought," but at once made the splendid donation of a thousand guineas to that fund—an example which he would have been glad to see more generally followed—instead of allowing that deep feeling which unquestionably existed throughout the country at the sad event which had befallen them to become chilled by time, and by what was natural to the English mind, the indulgence of their habit of criticism as to what was likely to be done with the money appropriated to this great national object. But to return to the object for which he had risen—viz., to thank the Chairman for the able address he had favoured them with, he begged to remark that this was the fourth address which Sir Thomas Phillips had delivered from that chair in his capacity of Chairman of the Council; and most thankful should they be that at a period when the Society had emerged from a comparatively dormant state, as evinced by the numbers presented to them—for whereas, in 1845, the members amounted to only 300, they had increased to nearly 3,000 in 1862—most thankful should they be that, at a period of such activity, they possessed in their chairman a gentleman competent to deliver such an address—one whose characteristics through life had been steadiness of principle and unflagging energy of purpose; one who, as they all knew, had been called upon in early life to combat ignorance at the peril of his life, in the melancholy form of brute violence,

but whose lot it was now to combat it with weapons more congenial to his mind than physical force—the weapons of light and truth. His labours in the many departments of education with which his name had been connected—but in none more than as associated with this Society—had contributed to advance that degree of general information and knowledge throughout the whole country, the results of which were so admirably summed up in the beautiful passage from Lord Bacon, with which he had concluded his address.

Mr. J. G. FRITH said he felt great pleasure in seconding the motion.

Mr. J. H. MURCHISON said he had always regarded the object of these annual addresses to be to lay before the Society the policy which the Council intended to pursue during the approaching year. The wording of the by-laws would bear him out in that. It seemed to him singular that such should be the arrangements of this Society, that five months should have elapsed since the Council was appointed before the members were put in possession of the programme of the policy they intended to pursue during their year of office—that term being now reduced to the short period of seven months. He had listened to the address with great attention, and had waited every moment to hear the announcement of the policy which the Council intended to pursue during their term of office. They had heard some well-merited remarks upon the lamented deaths of a few of their more distinguished members, but he was anxious to hear what course the Council intended to pursue with regard to the affairs of this Society. He was anxious to know what had become of that question which occupied their attention so much during the past session, which, it appeared to him, the Council would not support, because it was promoted by the members of the Society; for although, when they met in that room, they cordially supported the Council by approving the vote of a thousand guineas, they were prevented by the Council from doing what a deep-felt regret at the loss the Society had sustained would have prompted them to have done, and were asked to withdraw the proposition that the Society should have a memorial of its own of its late President, until a fitting opportunity should present itself of bringing it before the members. He had urged that subject upon the Council, but he was told that the members of the Society felt no interest in it—that they would not support it—and that no one would attend the meeting; in fact, that he would not get a sufficient number to constitute a meeting to promote so important an object. He was, however, determined, at all events as far as his humble exertions could accomplish it, that the meeting should not be a failure. He sent in to the Council a requisition which he was sure they would admit was not second—either in influence or in the distinguished names which it bore—to any requisition ever sent in to the Society of Arts, or any other society in this kingdom. After that a meeting of the Council was called, and he was told that there was no objection to a general meeting for the purpose indicated. The result was that a very influential meeting took place in that room, at which it was recommended by the Council that the question of the Society's memorial to its late president should be left to them to be brought before the members at a fitting time. The reason why it was not then thought a fitting time was that it would be likely to interfere with the public subscriptions to the national memorial. Now, he would say he did not believe their abstaining from having a memorial of their own had helped the national memorial in any way, but he believed it was the officious, the mistaken course, adopted by the Council of this Society, which had more to do with the want of success to the national memorial than anything else which had existed. They had an official report from the Council to the effect that they were going to inform every man and woman in the kingdom that the illustrious Prince Consort had departed this life. It seemed that the Council

supposed the people of this country had arrived at a great degree of ignorance, while it was thought they had progressed in the other direction. The "penny committee" was formed, which, in his opinion, had done more to reflect discredit upon the Society than anything else. (Cries of "Time.") Those interruptions showed the weakness of the views of those who resorted to such despicable means of expressing them; all he could say was, they were never resorted to by those who knew their cause was a good one. He was anxious to hear from the Council what had become of that "penny committee," and what was the amount of subscriptions which, through its unexampled exertions, it had gained towards the national memorial. He had also been anxious to hear what steps had been taken to obtain for the Society a memorial of its late president. The question raised on a former occasion was that the Society might not remain long in its present premises. They had, however, heard it stated to-night that the further lease of the premises had been secured upon terms which were considered favourable. They heard that in the report of the Council in June last, and the amount of the premium to be paid for the renewal of the lease was also stated. That being the case, the principal obstacle was removed, and he should like to know why they had not been informed what was intended to be done with regard to the memorial to the late president?

The CHAIRMAN said this had been stated in his address.

Mr. MURCHISON had not heard it; but that was not his fault, as several gentlemen near him complained that they could not hear a great deal of what was said.

A MEMBER rose to order.

The CHAIRMAN said he was very reluctant to interpose, except it was the wish of the meeting that he should do so.

Mr. MURCHISON contended that his remarks bore strictly upon the address which had been delivered, and what he complained of was, that it was not in accordance with the bye-laws, as an indication of the policy which the Council intended to pursue during their year of office. What he wanted to have heard was something new; and he would say, upon the points to which he had alluded, the address of the Chairman was very deficient.

Mr. WILLIAM HAWES said he had deprived himself of the pleasure he should have had in seconding the motion of a vote of thanks to the Chairman, because, seeing Mr. Murchison present, he rather expected that some observations of the kind they had just heard would be addressed to them. They had been told by Mr. Murchison that nothing had been said in the address to indicate the future policy of the Society. He believed that if Mr. Murchison had paid any attention to the address, he would have found that the future policy was fully indicated by the remarks which had fallen from their Chairman. He (Mr. Hawes) contended that, without indicating in detail the exact measures the Council would adopt—for that it would be hardly possible to do—the address had ably pointed out the advantages which had followed from what the Society had hitherto done, and indicated that they would continue to follow in the same course, and thereby continue to promote the great interests of the industrial arts of the country. He submitted that was the proper course for the Council to take—not bringing forward details, but stating general principles, and also informing them how they had acted up to the present time; and he was sure it would appeal to the feelings of all present, when the Chairman told them that for several years past they had, by lectures and papers, called the attention of the public to the necessity of looking to all parts of the world for the supply of cotton, the serious deficiency in which they now had to deplore. Had the information which this Society furnished been used, and had the advice given been received and acted upon, undoubtedly they now would have had a much larger supply of cotton from other countries than America, and a great deal of the present distress would not have occurred. That was a striking instance to prove that this Society had been carefully

occupied in collecting information which was not attended to as it might have been to the great advantage of the country at the present moment. They had also been told that the Council had not attended to the recommendation of the Society with regard to the memorial to the Prince Consort. Surely Mr. Murchison could not have been in the room, or he would have heard it stated in the address that the Council recommended that a bust of his Royal Highness should be erected in that room, and that the necessary resolution for that purpose would be brought before the members; and it would be a source of gratification to the Council if, when that resolution was brought before them, they responded to it by subscriptions liberal enough to erect such a bust as would secure a perfect representation of that great man, and be a credit to the artist who executed it and to those who provided the funds.

Mr. JOHN DILLON begged to recall the attention of the meeting to the object of the resolution before them. It was to express their opinion of the address they had heard this evening, also to express the opinion of this Society upon the general conduct, character and demeanour of the gentleman who had addressed them. It was necessary in a Society like this, in which differences of opinion would exist, that the chairman of their meeting should be a person who united the temper and manners of the gentleman with the knowledge of the scholar. Those qualities Sir Thomas Phillips eminently possessed, and he had brought them into practice this evening, and therefore in that view he should be happy to join in the motion before the meeting.

The resolution was put by Vice-Chancellor Sir W. PAGE WOOD, and carried by acclamation.

The Chairman then presented the Prince Consort's Prize to Mr. J. G. Greenhough, and the Medals awarded by the Council at the close of last session, to the following gentlemen:—

To Dr. F. Grace Calvert, F.R.S., for his paper "On Improvements and Progress in Dyeing and Calico-Printing since 1851." *The Society's Silver Medal.*

To E. C. C. Stanford, for his paper "On the Economic Uses of Seaweed." *The Society's Silver Medal.*

To James Morris, for his paper "On Mauritius: its Commercial and Social Bearings." *The Society's Silver Medal.*

The Secretary announced that on Wednesday evening next, the 26th inst., a Paper would be read "On the Utilization of Peat, with reference more particularly to the Manufacture of Hydro-Carbon Oils," by B. H. Paul, Ph. D.

The following letter has been received by the Secretary:—

SIR,—As it is not improbable that many of the members present this evening (without admiring the attack on the Chairman's address) may think that the doings of the past are more faithfully recorded than the future policy of the Society indicated, and as no member of the Council pointed out the paragraphs referring to the future, excepting the last few lines, which are of a general character, I venture to hope that I may not be considered intrusive if I call the members' attention to those parts of the address which may have escaped their notice.

1. The recommendation of a marble bust to the memory of the late Prince Consort.
2. The hope expressed that His Royal Highness the Prince of Wales will accept the office of President.
3. The opportunity afforded by the renewal of the lease for rendering the building more adequate to the wants of the Society, and the library more easily accessible, &c.

4. The acting on the precedent of 1852 in having no Exhibition next year.

5. The announcement of the papers at the evening meetings before Christmas.

6. The revision of the list of premiums so as best to meet the wants of the present period.

7. The intention of the Council to enlist the services of those members who are willing to take a part in the work of the Society by assigning special departments of investigation to members classified with relation to subjects with which they have been familiarised by their callings or studies.

As an independent member of 33 years' standing, I must express my humble opinion that if the Council are successful in carrying out the foregoing propositions, they will deserve the thanks of the Society, as much as I believe they now do for their past exertions.

I am, &c.,

PHILIP PALMER.

118, St. Martin's-lane, November 19, 1862.

#### METROPOLITAN ASSOCIATION FOR PROMOTING THE EDUCATION OF ADULTS.

A meeting of managers and teachers of schools, and other friends of education in the metropolis, was held on Saturday, the 8th of November, at the Whittington Club, for the formation of a "Metropolitan Association for promoting the education of adults, in union with the Society of Arts."

The chair was taken by Vice-Chancellor Sir W. Page Wood, Vice-President of the Society of Arts and Member of the Committee of the National School Society. In the course of a most interesting address, he gave a sketch of the past and present provision for the education of all classes of the community, and showed, with reference to the education of the working classes, how exactly the schemes of examination introduced by the Society of Arts, and carried on by its distinguished examiners, and by the various committees, "Local Boards," and other Institutions, of which this Society is the centre, are calculated to supply the very pressing deficiency arising from the very early age at which children of the poor are necessarily removed from their schools. He said that it might be taken as an axiom at the present time that the mind of the people of England was made up to the effect that the education of her people should be as effective and as extensive as possible, regard being had to all the circumstances and positions in which the various classes of society found themselves. The first steps in educating the poorer orders systematically were taken so long ago as the year 1699, at the formation of the Society for the Promotion of Christian Knowledge. In the space of four years from the establishment of that Society they collected about two thousand children in the metropolis, and in about thirty years they were able to collect, at one of their local gatherings, as many as thirty-four thousand in St. Paul's Cathedral. Not much more was done till the expiration of the first decade of the present century, about which time two great societies were formed—the National and the British and Foreign School Societies. In 1838 the Government took up the question, and at the present time one in seven of the entire population instead of one in seventeen, the proportion in 1810, was being educated at school. It was designed by the present movement to fill up a gap and supply a link in the outline or skeleton of the system of education now established in this country, which he believed would make that system a complete one, leaving the outline to be filled up by the earnest and zealous efforts of the friends of education throughout the country. Taking the upper and well-to-do classes of this country he found that the general education of young men was not considered complete till the age of about twenty or twenty-one, when those who were destined to enter professional life generally commenced

their special studies. The education of these young men was well provided by the universities and public schools of the land. In the class next below them the education was generally carried on till about fourteen or sixteen years of age, when they were apprenticed to their several callings: but this class had not been properly provided for until the recent movement, which extended the benefit of educated examiners from the universities to them through the agency of middle-class examinations. This movement not only offered a means of testing the progress made by young men themselves, but afforded a sort of guarantee to parents that the schools to which they sent their children were presided over by competent masters. After this class however, there came another, which was provided for by the National and British Schools to a certain extent; but in the great majority of instances the scholars left at a very early age, say from twelve to thirteen, if not earlier. It was for the assistance of this class of young persons that the present movement was set on foot. About ten years ago the Society of Arts resolved to give an opportunity to persons upwards of sixteen years of age to pursue their studies in a great variety of important subjects, and to pass examinations under examiners provided by the Society, and local institutions were invited to put themselves into union with the Society for promoting that object. The results had been of a most gratifying character. Nearly 100 Local Boards for examinations, and a considerable number of minor Unions of Institutions and schools for adults, had been formed to co-operate with the Society of Arts, and many of these boards, on the recommendation of the Society, carried on a subordinate system of examinations of a simple character, suitable for children under 16, and for elder persons whose education had been much neglected. To those who succeeded in these simple examinations they gave certificates and prizes on their own authority; and much good had been the result—many had been thus led on and prepared to succeed in the more difficult examinations of the Society of Arts. There was, however, one disadvantage: that there was no uniformity of standard, and, therefore, no uniformity of value in the certificates issued by those different bodies. To remedy this defect, through the instrumentality of Mr. Best, Mr. Chester, and other friends of education, a new Board had been recently grafted on the Society of Arts. This was called "The Central Committee of Educational Unions in connection with the Society of Arts;" and its object was simply to supply the desired uniformity by preparing annually, and printing, for general use, a set of questions to be answered by the candidates in the various elementary examinations just referred to. This arrangement first came into operation last year, and was found to work admirably. The "Metropolitan Association" now to be founded was to be in union with the Society of Arts, and also with its Central Committee, that is to say it would co-operate with the Society in its examinations, and would use the papers and certificates of the Central Committee in the preparatory examinations for children and backward adults. He was sure that all true friends of the working classes would rejoice to help forward a movement of the kind by becoming members of the Association and otherwise advancing its interests. Of course friends would be needed to carry on its operations; but past experience proved that every judicious effort made to extend and promote useful knowledge was likely to effect the greatest possible amount of good, both in the moral and scientific progress of the classes which were the subjects of such efforts. He believed that the noble fortitude and forbearance of the people of Lancashire under the tremendous affliction which had been befallen them, could be traced to the influence of education. "I verily believe," said he, "that in the history of the world such a spectacle was never before seen,—of thousands of the working population suffering the most acute distress, thoroughly understanding its causes,—not only without the commission of crimes, but without even

asking the Government to do for their relief a single act which might militate against justice, or compromise the honour of their country." The Vice-Chancellor concluded by stating, that although the present movement was set on foot by the Metropolitan Church Schoolmasters' Association, it was perfectly unsectarian in its character and objects.

Mr. HARRY CHESTER moved the first resolution. He explained that the meeting had been called by the Church Schoolmasters' Association, who had found by experience the want of such measures as had been introduced by the Society of Arts to encourage the education of adults. All experience showed that young men and women, after a hard day's work, would not generally pursue continuous and systematic instruction of an evening without some special stimulus. It was not sufficient vaguely to tell them that they ought to improve their minds, but when they were told that, if they would pursue, for a certain time, a definite course of systematic study, selected by themselves from among a great variety of defined courses, they would have an opportunity of being quietly examined in their own localities by competent examiners, who would test the results of their study, and give to them, if successful, a certificate which would be an honourable and useful testimonial, and might possibly be accompanied by a substantial prize, something like a real and effectual stimulus was presented to them. Mr. Chester laid before the meeting, and explained, an outline which he had been requested to draw up for the proposed new Association. It would interfere with no existing agencies, but would help, as far as possible, all the Institutes and evening schools of London, and promote the establishment of such bodies where at present they were wanting. The first object would be to bring the Society of Arts' examinations, certificates, and prizes, within the reach of all parts of the metropolis. To take advantage of this system it was necessary to be, directly or indirectly, through some affiliated body, in union with that Society. A considerable number of the Institutes, and a few of the Evening Schools of London were already in direct Union with the Society of Arts, but there was a great number of poor Institutes and poor Evening Schools which could not afford to enter into direct union with the Society, but would be allowed many of the advantages of the Union if they were grouped together in such an Association as that now to be formed, which would be directly united to the Society of Arts. The education of adults, which he thought the most important part of the whole work of public education, was involved in such difficulties as could not be surmounted by isolated efforts. We must combine all our energies, and hold up each other's hands. The Association would not interfere with the internal government of any Institute or school, but would be ready to help all that desired it. None could be too humble to receive its aid. The Vice-Chancellor had so clearly explained the character of the various Examinations, that it was not necessary to say much more respecting them; but as some of the audience had come late into the room, and might be puzzled between the Society of Arts' Examinations, Previous and Final, and those of the Central Committee and Local Boards, it might be well to clear up those points. The whole system was in connection with the Society of Arts, but the Society did not wish the system to be centralised more than was necessary. It acted everywhere through local agencies, and was desirous to create everywhere local bodies authoritative in Education, because composed of the representatives of educational Institutions. The Society had, 1st, its own Central Board of Examiners, by whom the papers of questions used in the "Final" (or advanced) Examinations were set and adjudged; 2nd, "Local Boards," who first held the "Previous" (or sifting) examinations, and without whose recommendation no candidate could be admitted to the Final Examinations. This was the machinery employed in what he would call the major Examinations, and these were not open to any person under 16 years of age. He would next describe what he

would call the Minor Examinations. These were open to any person not under 12. They were of a very simple and elementary character, suitable for children between 12 and 16, and for older persons whose education had been neglected. Two sets of examination papers were provided. They were called "Junior" and "Senior;" but these terms referred to the degrees of simplicity in the questions proposed, and not to the ages of the candidates. A well-instructed child of 12 might select the "Senior," or less simple set of questions; while an old man of neglected education might select the "Junior," or simpler set. Both the sets were prepared by the Central Committee, and printed by the Society of Arts. These minor examinations were held by the same "Local Boards" as had been already described as "sifting" the candidates in the major examinations, and every candidate not under 16, who passed a satisfactory examination in the "Senior" set of papers in the former or minor examinations, might be recommended for examination in the latter or final examinations. The Society's Union extended, and its examinations were held, throughout nearly the whole kingdom. They were held in the spring of this year at 81 different places. Among the places where they had been most successfully established was Glasgow. Glasgow, last spring, presented 139 candidates, who carried off 150 certificates, and prizes amounting to £48; while London, with its immense population, presented only 105 candidates, who obtained 126 certificates, and prizes amounting to £26. The Institutions which, being in union with the Society of Arts, had presented the 105 candidates for examination in London were the City of London College, 55 candidates and 63 certificates; the London Mechanics' Institution, 15 candidates and 21 certificates; the Polytechnic Institution, 11 candidates and 13 certificates; the Evening School of St. Stephen's, Westminster, 15 candidates and 18 certificates; and the evening school of the Rev. W. Rogers, St. Thomas, Charterhouse, 7 candidates and 11 certificates. The City of London College, formerly the Metropolitan Evening Classes at Crosby Hall, had been remarkably successful since it was reconstituted in its present collegiate form. In that Institution a portion of the governing power was reserved to the certificated students. As at the Universities, when a man obtained a fellowship, or took his degree of M.A., he would partake of the government of his College or University, and thus an *esprit de corps* was maintained; so, in the City of London College, a young man, when he had completed his studies there in the classes, did not now break off his connection with it, but retained an honourable position in its management. This was a regulation well worthy to be adopted in every similar Institution. Mr. Chester stated, that a few nights previously he had distributed the certificates and prizes to male and female candidates at the London Mechanics' Institution. The Local Board there had been very successful. He was much pleased to see there candidates coming up year after year, and adding certificate to certificate. Some of them had received certificates in previous years at other places, at Glasgow, Bradford, and in different parts of London. The system of examinations was applicable everywhere. The certificates in the major examinations were granted under the seal of the Society of Arts, and were recognised everywhere. Those in the minor examinations were issued by the Local Boards on their own authority, but in a form prepared by the Central Committee, bearing on its face the connection with the Society of Arts, and of an uniform value everywhere. The proposed Association was not at all to be confined to members of the established church. He concluded by moving that the Association be now established, and that a Provisional Committee be formed to bring it into immediate operation.

The Rev. Prebendary JACKSON, Rector of Stoke Newington, seconded the resolution. He had listened with intense interest to the admirable review of the history of education furnished by the chairman, and he believed he

was justified in saying that there was at the present time a greater amount of true and sound instruction distributed throughout the length and breadth of England than was found in any other nation on the face of the earth. If there was a quarter of a boy in a hundred or some such fraction educated in Prussia more than in England, we might on the whole believe that English boys had a greater amount of real instruction imparted to them, such as rightfully belonged to the citizens of their free country. It was true that the French workmen enjoyed greater advantages, as to Art education, than the artisans of our own country, but he thought as adult education advanced here, the contrast between the artistic skill of these nations would diminish. One of the greatest anxieties, which every parish clergyman experienced in a populous district, was as to what became of the boys during that critical period between the time when they left school and when they were settled in life. That period was extended beyond what it would otherwise be by the necessity under which many parents laboured of withdrawing their sons from school at a very early age, in order to make them do something to earn their own livelihood; and such boys would be deprived of educational advantages, were it not for the evening schools, and other opportunities of education supplied by such associations as the one it was now proposed to establish. He thought that the collegiate form recommended by the previous speaker was most valuable. It led young men to cherish their connection with the Institution at which many useful lessons had been learned.

The resolution having been agreed to,

SIR THOMAS PHILLIPS, Chairman of the Council of the Society of Arts, moved, "That the said Provisional Committee consist of Viscount Enfield, Sir T. Phillips, Harry Chester, Esq., J. G. Fitch, Esq., Samuel Redgrave, Esq., E. C. Tufnell, Esq., Rev. J. Jackson, Rev. I. Lingham, Rev. W. Rogers, and Messrs. Christie, Day, Ditch, Heller, Ives, and Sales, with power to add to their number, and with an instruction to submit their proceedings to a general meeting of the Association for confirmation at the earliest possible period." He said that there was one circumstance which deeply impressed his mind in reference to the importance of the subject they were discussing. It was stated in the report of the Committee of Council on Education that more than two millions of scholars were now being educated in our day schools; but it was also stated by the Commissioners that not more than five per cent. remained at school beyond thirteen years of age. In many large towns the large proportion of children left at the age of eleven years. It was to be feared, therefore, that unless special means of continuing their education were placed within the reach of these young people, nearly all the good they derived from school would be lost before they attained the age of eighteen. About one-fifth, or four hundred thousand, of the number of children under education went forth into the world every year, and it appeared to him a most serious matter that these young persons should pass eight or nine years of the most critical period of life without those restraints which they experienced at school, calculated as these would be to form and strengthen their character, and fit them for occupying an honourable and useful position in society. The Association which they were forming had an eye especially to these young people, and he could not help thinking that all true friends of education would give to it the most cordial support. He believed that evening schools could only be rendered truly effective by the countenance and support of the classes immediately above those which were intended to be benefited.

Mr. JOSHUA FITCH, Principal of the British and Foreign School Society's Training School, seconded the resolution. He thought that the Government aid to night schools would be very meagre on account of their peculiar constitution. The Association now established would supply the deficiency long experienced by practical educationists. It would connect the old

scholars with the day school and thus solve a very difficult problem.

On the motion of Rev. CHARLES ROBINS, seconded by Mr. CHARLES BROOKE, one of the Examiners of the Society of Arts, the thanks of the meeting were presented to Vice-Chancellor Wood, for his kindness in presiding over the meeting, and for his valuable services in the chair.

The following are the proposed rules of the Association:—

1. *Title*.—THE METROPOLITAN ASSOCIATION FOR PROMOTING THE EDUCATION OF ADULTS, in union with the Society of Arts, and with the Central Committee of Educational Unions in connection with that Society.

2. The object of the Association is to extend and apply, in the Metropolitan District, existing means and motives for the Education of Adults, whether members of institutes, pupils of evening schools, or other students.

3. By circulars, addresses, visits of organizing officers, conferences, and otherwise, the Association will promote the improvement and establishment of institutes and evening schools and will help them to take advantage of the examinations instituted by the Society of Arts, for persons of either sex, not under sixteen years of age; and also of the elementary and preparatory examinations instituted by the Central Committee of Educational Unions, for persons of either sex, not under twelve years of age.

4. Institutes on payment of ten shillings and sixpence annually, local boards of examinations without payment, and schools on payment of seven shillings and sixpence annually, may be admitted into the Association.

5. Members of the Association will be—(a) Life members, i.e., donors of £10 10s. in one sum; (b) Annual members, i.e., annual subscribers of £1 1s.; (c) Representative members, i.e., representatives of associated institutes, local boards, and schools; (d) Certificated members, i.e., holders of four certificates of the first class from the Society of Arts, and subscribing five shillings annually.

6. Every such local board, institute, and school, may appoint one representative to be a member of the Association without payment; and every such institute and school may also appoint one of its teachers to be a member of the Association on payment of five shillings annually.

7. The Association will have a president, vice-presidents, a committee of management, a treasurer or treasurers, a secretary or secretaries, at least one organizing officer with a salary, and such other officers as may be requisite.

8. The Association will have a local board, or such local boards as may be requisite, for holding the "Previous examinations" of the Society of Arts, and the "Elementary examinations" of the Central Committee, and also for superintending the "Final examinations" of the Society of Arts, at convenient places throughout the district.

9. So far as the committee of management shall think it expedient and have the means, the Association will offer prizes for the encouragement of candidates in the examinations, and for essays or other papers on specified subjects, and for collections of natural history, etc., submitted for competition by institutes, schools, or individuals within the limits of the Association.

10. The Association will have, at least, one conference yearly at which the members will be summoned, and representatives of other educational institutions, and distinguished friends of education, will be invited, to attend, for the interchange of experience, and for the discussion of questions affecting the objects of the Association, and the interests of education.

11. The Association will have an annual meeting for the appointment of the committee and officers, the passing of accounts, the reception of reports from the committee, and other necessary business.

12. The president of the Association, the committee by a resolution of a quorum, the chairman of the committee, or any five members of the Association, may require the secretary to summon a special general meeting for a specific object, or objects, at any time, upon seven days' notice.

13. The certificates and prizes awarded by the Association, or (through the Association) by the Society of Arts, will be publicly distributed, at meetings held in the evening, at such place or places as the committee may think most likely to be

acceptable to the successful candidates, and to be conducive to the interests of the Association.

14. The Association will promote the holding of meetings at convenient places throughout the district, to stir up an interest in the education of adults, to make known the objects of the Association and its modes of action, to offer its co-operation, and to strengthen the hands of the promoters of institutes and evening schools.

15. The Association will annually publish a report setting forth in detail the progress, state, desiderata, and prospects of the education of adults throughout the district.

16. The Association will not itself examine candidates in religious doctrine; but the Lord Bishops of London and Winchester will be asked to appoint their own examiners, who may examine in Holy Scripture and the Prayer Book any candidate who may desire to be so examined; and the result of such examination may be stated by those examiners, if the candidate desire it, upon the face of the certificates issued by the Association.

17. The committee of management will consist of the president, the vice-presidents, the treasurer or treasurers, the honorary secretary or secretaries, and not more than twenty other members of the Association.

18. A quorum of the committee will be five members.

19. The committee will elect one of their body to be their chairman.

20. Subject to the forgoing regulations the management of the Association is vested absolutely in the committee.

HENRY H. SALES, Secretary, *pro tem*.

#### INTERNATIONAL EXHIBITION OF 1862.

#### THE INTRODUCTORY LECTURE TO A COURSE ON THE COMMERCE OF THE COUNTRIES REPRESENTED AT THE INTERNATIONAL EXHIBITION.

BY PROFESSOR LEONE LEVI, OF KING'S COLLEGE, LONDON, LL.D., F.S.A., F.S.S., BARRISTER-AT-LAW.

The Right Hon. W. E. GLADSTONE, Chancellor of the Exchequer, in the chair.

The Right Hon. Earl GRANVILLE, K.G., was to have presided, but owing to indisposition was prevented. The Rev. Dr. JELF (Principal of the College), Sir CHARLES WENTWORTH DILKE, and other gentlemen connected with the International Exhibition, were present.

It may appear somewhat novel to open a course of lectures on the International Exhibition, in a college devoted to the practical instruction of youth and to the cultivation of science, but truly that great Industrial undertaking did much more than enchant the numerous visitors and dazzle our senses of seeing and hearing. We had there the most enlarged field for the study of experimental science; we had there the practical exposition of problems yet unsolved; of ideas yet undeveloped. The chemist, the mineralogist, the geologist, the mechanical engineer, the philosopher, found there the richest materials for study and reflection, and even the most careless sight-seer unconsciously imbibed most valuable and solid lessons, the more memorable because they were embodied in tangible objects. But great as were the labour and thought bestowed on the vast mass of objects presented to our view, some of them of wondrous beauty and enormous intrinsic value, and others, though plain and unattractive, the representatives of extensive national resources, many of the lessons which they would have suggested were in most cases lost for want of exposition and information. We saw and passed by objects which would have awakened many a thought and engaged our earnest attention, had means been afforded to furnish the necessary aid for the better understanding of them. And how much might have been learnt from a careful observation on the absence or on the presence of certain articles in different departments, or from the poverty or richness of each special exhibition. This, however, has been left for us to do, and we are now in the best condition to enter into such a

study. Whilst the doors of that great palace were open we satisfied our eyes and fed our imagination; now we can sit down to ponder on what we have seen and to satisfy our craving for more solid food.

We have truly seen a great sight. It was a noble thing to contemplate, and a wonderful thing to realise, such an accumulation of rare and splendid articles from every part of the habitable world. It was a museum richer than that of any European capital. It was a vast and endless succession of shops all dressed in their best holiday attire. It was a promenade such as we have seen in the Unter den Linden or the Tuileries, or other parks or boulevards at their loveliest moments. It was each and all these combined and a great deal more. The eye and the ear were every moment in active exercise. Whilst we were admiring some charming diamond necklaces or the most beautiful prisms, we were listening to the most exquisite music. And what taste was exhibited in the preparation of even the smallest department of industry. How neat, how clean, how marvellously planned everything seemed to be. Who could once traverse that magnificent nave without acquiring impressions not easily effaced and lessons of a most practical character! Well may we rejoice to have had an opportunity of seeing such a sight, and well may we congratulate ourselves, and even the industrial world, that notwithstanding all the fears and forebodings once entertained, and in spite of the many untoward events which seemed to thwart the execution of the noble project, this great International Exhibition has gone through with such a remarkable success.

There was, indeed, one great want this year as compared with 1851—it was the absence of his Royal Highness the Prince Consort, the head and life of the parent Exhibition. In his death the Exhibition of 1862 lost its best supporter and warmest friend, and with him, too, we lost the noble pageantry which lent to the ceremonials of 1851 so great a lustre. What an impressive lesson of human frailty was afforded by the loss of that great and good man at such a moment. There he was, heart and mind wholly given to this Great Exhibition. He would see all the plans. To him the final choice was given of all the designs. Many a time he went to inspect the works, and many were the hours he spent at Colonel Fowke's studio. The Royal Family, not less than the humblest Londoner, anticipated the 1st of May with the utmost delight, and everything seemed to approach a ceremony as brilliant and delightful as that which the cartoons of 1851 still bring fresh to our eye. But my friends, man proposes, and God disposes. May came, the Exhibition came, the splendid weather came—but there was death in the Palace, and he who would have been at the acme of his triumph was ere this consigned to the silence of the tomb.

Of Exhibitions there have been many in France and this country. As far back as one hundred years ago, in 1761, an exhibition of machinery was held in the rooms of the Society of Arts. In 1828 there was an exhibition of specimens of new and improved productions of the artisans and manufacturers of the United Kingdom in the King's-mews, at Charing-cross, and one year after the Royal Dublin Society adopted the plan of Triennial Exhibitions of specimens of native industry. In 1845 there was an exhibition of manufacturers at the Free Trade Bazaar in Covent Garden Theatre. And for many years an exhibition of inventions was held in the rooms of the Society of Arts, and many local exhibitions had been successfully carried out in Manchester, Birmingham, Leeds, and Liverpool. But it was not till 1849, when the country first adopted a liberal commercial policy, and when the sounds of freedom of industry echoed from every quarter, that the Society of Arts, animated by its illustrious President, gave forth the magnificent idea of an International Exhibition, comprising all branches of industry, and from all nations of the world. It was a glorious event which thus inaugurated the latter half of the nineteenth century. By it we have made greater strides in the arts of peace,



civilisation, and science, than had been achieved for ages past. And it essentially departed from the narrow limits of former exhibitions, inasmuch as leaving the commercial bearing to the care of the exhibitors themselves, it first originated that noble idea of procuring a true test and a living picture of the point of development at which the whole of mankind had arrived, and a new starting point from which all nations may be able to direct their further exertions. Truly in this age, when events succeed each other with such rapidity, scarcely leaving any traces of their passage, we do require some outstanding monument which shall denote the periodical limit of human advancement. In morals nothing is more difficult than to ascertain the nature and extent of progress from one period to another. The transition is generally so slender and uncertain; the dark pages of crime and social wrongs so often burst out upon our view after their long disappearance, that we can scarcely say whether or not and at what time any decided improvement has become conspicuous. Happily in industrial and mechanical art we are now enabled to determine, with a tolerable amount of precision, what has been achieved in different countries. We can mark their shortcomings, and we can trace the causes which retard their progress.

The decided success which attended the first Exhibition encouraged the United States and France to undertake similar efforts. But, truly, exhibitions like these, projected on so gigantic a scale, can only be successful in great and populous capitals. It must be in a country rich within herself in those articles which constitute the chief attractions of the Exhibition, where there exists abundant peace and security, and where the government is not only of a progressive character, but influential in the council of nations. And there is no capital which can be compared to London in all these requisites. Here we have a population of nigh 3,000,000, spread over a wide surface of some twenty miles, mighty railways pouring in daily large streams of visitors, and superabundant house accommodation. And here we have merchant princes luxuriating in wealth and splendour; a nobility rich and enlightened; and, above all, a most gracious Queen, who reigns in the heart of her people, and who is ever foremost in fostering national greatness. No wonder that an Exhibition of this kind succeeds here better than could succeed in any other capital.

As the decennium was advancing from the famous 1851, the Society of Arts made preparation for another great Exhibition. At first 1861 had been fixed for the purpose, but owing to the war in Italy, it was delayed till 1862. Whilst the proposal was under discussion, there were not a few who doubted the expediency of having another such Exhibition so soon after those of London and Paris. It was questioned whether the progress would be sufficiently marked during the interval; whether foreign countries would respond to the appeal; above all, whether it would be able to defray its own expenses, seeing that there was no longer any novelty in the project; and that we have constantly such splendid exhibitions of rarities in the Kensington Museum and Crystal Palace. In answer to these objections, it was stated that our commerce has nigh doubled in the decennium; that our colonies have immensely increased in civilisation, industry, and commerce; that foreign countries were more alive than ever to the advantage of such Exhibitions to industry and art; that in this era of progress, 10 years are as fruitful of inventions and improvements as 20 or thirty years would have been in former times, and that as it was contemplated to add an exhibition of painting and sculpture, this would impart sufficient novelty to secure a brilliant success. Then came the question, what improvement can be suggested upon the general management of the Exhibition. Should the geographical distribution of articles be adhered to, or should we have all articles exhibited under certain classes? We can well imagine that nations making great sacrifices, in order to exhibit their industries in the best possible manner, will

object to their being mixed up and re-distributed into classes. Nor is it unimportant to animate this spirit of nationality, and to have a distinct exhibition of the productions and manufactures of each country; yet we doubt whether the geographical arrangement is by itself best adapted to exhibit the improvement made in manufactures, the development of taste and skill in different departments of industry, the uses and adaptation of new products, and the thousand other objects which science and art have brought to light in recent times. A combination of the geographical and classified distribution is certainly a great desideratum for future exhibitions.

And what is the best classification? Most difficult it must be to classify such a multitude of objects, differing so widely from one another. When, at the Statistical Congress, we endeavoured to establish a common classification of crime, and a common nosological table of the causes of death, we found, not only that each country had its own predilection for a certain classification, but that we wanted the first essential for any classification—a common nomenclature. Various methods have been suggested for the classification of articles of industry. The French Exhibition of 1827 was divided into five divisions, viz., chemical, mechanical, physical, economical, and miscellaneous art. In 1837 the classification adopted was—alimentary, sanitary, vestimentary, domiciliary, locomotive, sensitive, intellectual, preparative, and social. In 1844 the objects were classified as woven, mineral, mechanical, mathematical, chemical, fine art, ceramic, and miscellaneous. And in 1851 the whole was divided into four great sections, each including a certain number of classes, viz., raw materials, machinery, manufactured goods, and works of fine art. Some modifications were introduced on this classification in the Paris Exhibition of 1855, but this year we returned to that of 1851, with the addition of photography and a department for educational works and appliances. This classification takes, first, all that is produced under the earth and over the earth, viz., mineral, chemical, and medical products, substances used as food, and animal and vegetable substances used in manufactures; next, machinery for expediting communication and transport, and machinery for lessening manual labour in all departments of industry; next, all articles having reference to building, engineering, and architecture, civil, naval, and military; next, the instruments by which we measure space, mechanical and physical forces, or illustrate the laws of mechanical and physical science; next, the instruments by which we measure and register time, modulate sound, and employ in surgical purposes; and after these the raw materials and their manufactures. The principal object of a good classification is to afford ready means of finding any article of human industry from the vast multitude of objects, by enabling the student to search for such objects under that class which the mind would readily suggest as their appropriate place; to facilitate the labour of the juries in comparing the merits of the same articles exhibited by different countries; and, practically, to introduce order and clearness in what would otherwise be a chaos of confusion. I shall offer no criticism on the classification now adopted, but seeing that Exhibitions of this nature will periodically be held, it may be desirable for Her Majesty's Commissioners to appoint an International Commission to report on the subject.

Any attempt to analyse the immense collection of articles exhibited in this vast edifice, whether geographically or according to classes, must necessarily prove most imperfect. It is a weighty matter to think that we had the industries of the world before us; that the most eminent personages and most scientific men in all countries were engaged in selecting articles for the Great Exhibition. It is possible that some choice products have never found their way to the magic building; that many wonderful discoveries have been purposely kept back; but we had sufficient evidence before us that the Exhibition did represent at least the bulk of what is manufactured and

produced in this Anno Domini 1862. As might be expected, Britain is first among the exhibiting countries. The Exhibition was at our door. England's supremacy in manufacturing industry has long been established, and she could naturally muster a great deal upon every branch of industry. In metals she exhibited the finest specimens of iron manufactures, not only in common bars and rails, but in statues, fountains, and gates, sparkling steel and cutlery, and ores in abundance. England had the largest number of exhibitors under this class, exceeding the number of any other country. And so in machinery. Continental nations may be advancing, but Britain is the seat of mechanical power. The woollen and cotton manufactures were well represented, and so the linen and silk. It was pleasing to see the special productions of Leeds, Bradford, Manchester, Glasgow, one by one so tastefully arranged; here the thickest broad-cloth, there the splendid muslin; here Nottingham laces, there Spitalfields brocades and ribbons, whilst the calico shone in all its purity, notwithstanding the temporary dearth of cotton. England has made rapid advance in late years. Open competition animates her efforts, and she has energy, capital, and strength sufficient to face all obstacles. Very close to Britain were her colonies; India excelling in her rich and costly articles, in the fineness of her materials, and in the abundance of her produce; Victoria, and the other Australian colonies, prominent for their golden treasures and their wool; Canada, with her timber trophy, and one and all exhibiting the sources of immense wealth as yet but imperfectly developed.

France, our nearest neighbour, our successful rival, contributed much to the success of the Exhibition. She is singularly rich in agricultural produce, in chemical substances, in the finer manufactures of wool and silk, and in industrial art generally, such as porcelain, gold and silver ornaments, articles de Paris, tapestry, &c. Next in importance is Germany. Prussia had a splendid collection of minerals; her woollen goods were abundant. Austria exhibited extensively under every class, but the other German States made an inferior show, owing to the unfortunate subdivision of their exhibitions. With a vast variety of articles, some of which were of great worth and beauty, the exhibitions of these States were not conspicuous enough to show to advantage. It would be of vast importance to Germany if she could exhibit her productions and manufactures as a whole; if the various states would consent to merge their exhibitions into one great mass, according to the respective classes. Italy, notwithstanding the difficulties of her infantile position among the great powers of Europe, has sent a fair representation of her rich and varied productions. Under the first four classes she exhibited largely, whilst her courts were thronged by admirers of her sculpture and works of art. Spain and Portugal abounded in articles of food, minerals, and vegetable substances, though they were both imperfectly represented in other branches, and their manufactures showed but little advance. Russia exhibited but little, when we consider the extent of her territory and the productiveness of her land. How much must she yet accomplish in order to enter in a successful competition with other European countries? Denmark, Sweden, and Norway were rich in metals. Switzerland excelled in watches and cotton manufactures. Belgium abounded in lace, and was rich in minerals and woollen cloth. The American States were but imperfectly represented, the United States making only a fair exhibition of their machinery. Brazil, Costa Rica, Venezuela exhibited under a few classes only. Asiatic produce was seen under Japan, China, and India, and there was a corner for Liberia, in Africa.

And now that we have the world's industries before us, what do we see in them? The International Exhibition differs essentially from fairs, bazaars, and other meeting-places for buyers and sellers, inasmuch as it is not limited to those articles of trade which each country can offer to the commerce of the world, but is a miniature represen-

tation of the state of industry of each country. In some cases we had the entire costume of the inhabitants. In others we had their household economy, and in others correct and even photographic views of the institutions of the country. And as the industries of nations are primarily intended to satisfy the local wants of each country, and are necessarily adapted to the climate, habits, and fashions which prevail in different states and among different races and nations, it is natural to find that much that is produced or manufactured in them would be unfit for any other country. But the question is naturally suggested, do such productions or manufactures suffice for the wants of such inhabitants? Here are 60,000,000 Russians, there some 300,000,000 Chinese, and there some 200,000,000 Hindoos. We have some ideas of the wants of man, of the comforts he needs, of the requirements of civilization! Do they possess at home all they need, or would they not be thankful for our cotton or for our linen, for our tools or for our cutlery? As we traverse the various courts of this vast Exhibition, we are not long in finding out that if most countries are wanting in some things, each and all possess some special productions which are greatly in excess of their own wants. Nature has provided each country and district with a different source of material wealth, and it is most important that we should obtain a clear idea of the varied productions of each country in order that we may resort to them for those articles in which we are deficient. But it is not enough to have a certain capacity for producing. Nature, it is true, offers its powers and its products, but industry and labour discover their various and latent utility, and surmount the difficulties of obtaining such products and of giving them the requisite modifications; hence the need of inquiring to what degree of perfection has each country brought its own productions and manufactures, what contrivances have been introduced in order to develop such natural riches, and render them available to the wants of man. Lastly, another inquiry not less essential is, what quantities are produced of such articles? The cereals, for instance, are produced almost everywhere. But how few countries have any excess of them for exports. The productive power of a country is not sufficiently exhibited by the samples it exhibits. The physical riches are valueless unless the economical conditions of labour are carefully fulfilled. But truly a bare inspection of the vast materials exhibited would never enable us to answer these important questions, and we are thankful for the labour of those juries who, with special knowledge and experience, have undergone the arduous task of testing the merits and other claims of the productions and manufactures of each country. To these reports, therefore, I direct your attention. Whilst in the catalogue of each country you may possess an indication of the special resources and industries of nations, in these reports you will find a correct appreciation of their worth, and what more interests us, their comparative merits and progress. As an illustration, take the two classes in which we are more deeply interested—the minerals and textile fabrics. The Exhibition abounded in samples of minerals. As many as fifty-four countries have come forward as Exhibitors under this class. The splendid discoveries of gold in California and Australia, and the extension of railways, have greatly encouraged mining adventures, whilst the extension of geological studies, as evidenced by the magnificent maps exhibited, has rendered such adventures more certain and reliable. Seeing all this, we might conceive that our coals and our iron would indeed no longer be required for exportation. But the juries tell us a very different story. Whilst this country produces as much as 80,000,000 of tons of coals, France at most produces 7,000,000 tons, and Prussia, 15,000,000 tons; and whilst Britain produces 4,000,000 tons of iron, France produces 1,000,000 tons only. But what really constitutes the great superiority of our mineral wealth is rather the contiguity of the coal and iron mines, and the great facility of transport which we possess.



These facts, however, are not apparent at the Exhibition, and we must apply to other sources for such particulars. Immediately attached to iron and metals are the machinery. The contents of the western annexe were truly one of the greatest attractions to the Exhibition. We all admired the beautiful contrivances—the precision of workmanship—the efficacy of steam power—the vastness of design which such machines exhibited; but they seem to have attained a state of perfection admitting but little further progress. The juries tell us that, as compared with the Exhibition of 1851, there was much less originality of invention, or introduction of new principles, than improvements of details, workmanship, and material. The results of the exhibition of textile fabrics were not less important. Great was the anxiety of our manufacturers as to the probable consequences of a free trade policy. In silks, especially, the competition of France was much dreaded, and not a few prognosticated most disastrous results. The Exhibition has brought the manufactures of Lyons and Spitalfields in close contact, and competent judges have pronounced that a much greater advance has been made by this country than by France during the last ten years, and that with an improved taste, with better materials, and finer colours, our manufacturers can produce ribbons and other silks of merit quite equal to the French. In woollens France stood higher than England. France stood first for woollen shawls and flannels, Britain for worsted and mixed fabrics. The cotton manufacture showed little improvement since 1851, but the inadequate representation of this manufacture rendered it difficult for the juries to make a full comparison of the respective merits. Universal exhibitions, said the juries, would lose a considerable part of their usefulness if the great manufacturers of every nation did not feel it to be their duty to associate together and take their part in the work of improvement, which such exhibitions cannot fail to effect, by sending specimens of their several productions.

From what has been stated, it will appear that nothing could be more important for the successful issue of such exhibitions than the appointment of men of knowledge and experience in each branch of industry, whose duty it is to report on the comparative merits of the various productions, and point out the special characteristics of each industry. But their duties have not been confined to a mere report. Their labours have been directed to reward exhibitors for their success as an encouragement for further exertions, and we have seen a great machinery set up for awarding medals and honourable mentions. It would be interesting to sift the motives which led so many thousand manufacturers, artists, and producers, from the most distant quarters of the globe, to send hither their products and manufactures. In some countries, as in England, the exhibitors came forward spontaneously without any pressure or invitation on the part of the Government. In other countries, and in the colonies, the Government took the initiative, and assumed a great portion of the expense and responsibility, but in all cases the exhibitors incurred great risk, and made positive sacrifices of time and labour, and not a few purposely produced their articles for the Exhibition. It would be idle to suppose that in so doing they were animated by purely philanthropic motives, or by the desire to contribute to an industrial festival likely to promote the interests of civilisation and commerce. Their principal object was to gain reputation and to attract custom. To them the Exhibition was a gigantic advertisement. And when we add the expectation of receiving medals which shall signalise their productions, and set them before the world as models of beauty, excellence, or cheapness, we may well conceive that it was not for nought that they embarked in the undertaking. To inventors, men of genius, enterprising men, such exhibitions are golden opportunities. A medal is to them little short of a patent. The judgment of the jury, the approbation of an appreciating public, are the making of their fortunes. Yet I cannot help thinking that the present system of awarding medals to successful exhibi-

tors is, on the whole, far from beneficial or satisfactory. We shall not enter into the principles which should regulate the awarding of medals or honourable mentions. But we must consider that the principal aim of these exhibitions is to mark the progress of nations in industry and art, for which purpose we require the co-operation of those who have taken the largest part in such a progress, and who are, on that very account, careless of such awards. We must have regard to the difficulty of ascertaining which article has the merit of absolute superiority among so many produced under different circumstances. And we must bear in mind that, independently altogether of the awards of the juries, the exhibitors derive abundant advantage from the judgment of the press and visitors, and from the publicity which they obtain for their manufacture and industry.

There is one aspect of such exhibitions which is of the greatest interest, that is, the recognition of the artist and producer as distinct from the merchant. The principal object of such exhibitions is to call forth a universal competition and emulation among the artists of the world. What a wonderful influence it will have in stimulating their powers and leading them to excel both in the conception and execution of their industries. The powers of the human mind, the prodigies of genius, lie embedded in man like the geological strata under the surface of the earth. We must dig deeper and deeper to discover its riches. Whatever stimulates us to exercise our powers, whatever compels us to search the treasures we possess within ourselves, engrafts a new life on our being. And of all other motives emulation is the most likely to effect this wonderful transformation. When powerfully excited, and for lofty purposes, it is a most potent agent in human improvement.

We may well expect that an emulation so powerfully excited may give a great stimulus to inventions, and that very many new ideas and new contrivances may yet be brought to light; but remember that such systems of exhibitions trench more and more into that secrecy which heretofore formed the chief capital stock of inventors. It becomes, in fact, their interest to bring to light whatever discovery they may have made, so that they may also obtain the benefit of the advance made by others in the same path. And thus inventions which would have required years and years to perfect and render available, are now, by the mutual aid of the inventors of all countries, brought speedily to practical use. How far such a revolution may affect the Patent Laws, and render their abolition an absolute necessity, we cannot now inquire. And how great and beneficial is the influence of such exhibitions on general commerce. They supply primarily that amount of knowledge of the special products of each country without which no commerce can ever be undertaken. By means of communication, it is true, the productions of the world are now easily surveyed, yet not a few natural products or manufactures escape notice, and are thus allowed to lie dormant or wasted. Exhibitions like these often show the varied uses made of well-known materials, and are thus the means for opening up and extending many branches of trade. But principally they become valuable as the exponent of the true laws which regulate the commerce of the world, leading nations to alter their tariffs, and to allow industry to advance unshackled by any artificial restrictions.

Two important additions have been made in this Exhibition, of an eminently educational character, which deserve special notice. One is the magnificent collection of paintings, the other the department for educational works and appliances. The Royal Commissioners justly estimated the educational bearings of such Exhibitions when they added these two departments. Nothing could be better devised to refine and educate the taste of the nation than such an exhibition of the Art Treasures of all nations. A chaste and correct taste in painting influences materially the civilization and morals of a country.

Would that the cheap prints which hang over the fireplaces of the people were evidencing greater ability of design, greater adherence to the works of nature, greater love for the beautiful and higher and nobler themes for their subjects. Would that we could multiply copies of these masterpieces of art so as to bring them within the reach of the masses of the people. The department for educational works and appliances is indeed in some respects foreign to the objects of this great Exhibition, inasmuch as it enters into the study of the processes which lead to such results as the International Exhibition itself. It trenches on the science of morals, inasmuch as it indicates the works written to awaken the moral sense, to inculcate notions of duty, and to brace up the energies of a nation. It is a step towards an exhibition of the moral, religious, social, and philanthropic institutions of nations, which certainly did not enter in the plan of an exhibition of industry. There is no objection to such an extension. But that it may be successful it would be necessary to provide means for discussing the bearing of such models and appliances; to bring out the lessons which they suggest, and to indicate the result to which they lead. These cannot be so well taught by the eye. These works and appliances do not speak for themselves as a piece of sculpture or an article of industry. The value of the Educational Exhibition set on foot by the Society of Arts in 1854, drew its importance and value from the public lectures and conversational meetings which were held daily during the long period, and which had the effect of directing the attention of teachers in a systematic way to the various material helps of which these works were susceptible, and affording means for the discussion of methods and for friendly conference on the principles of teaching. The same want was indeed felt as regards sanitary improvements and construction. A great deal more, said the juries, is known respecting these objects than was seen in the shape of actual models at the Exhibition. Of new ideas of a purely sanitary kind there were absolutely none, although since 1851 the subject has grown widely. We know more of the condition of the air, we know more of the necessity of ventilation, and more of its difficulty, but the progress of our knowledge has not been seen in the Exhibition. Thus far we see a defect in it; the whole circle of human invention has not been exposed to view, and room is made for improvement in a future exhibition.

But what improvement can be suggested? It is the combination of mind bearing upon matter; it is the affording an opportunity for an expression of the wants felt and side by side with the provisions made for supplying them. Why should not the Society for the Encouragement of Arts, Manufactures, and Commerce, the Chambers of Commerce, the British Association for the promotion of Science, the National Association for the promotion of Social Science, the Universities, and Mechanics' Institutes, our Philanthropic Associations, and as many other foreign institutes and learned bodies hold special congresses on such occasions? Why should we not invite to the inspection of such a collection of works of art, industry, and science, men from all nations, who have devoted their talents and energies, and who have in any way developed any one of the great improvements by which our age is distinguished? A wonderful amount of intelligence was manifested in the numberless articles exhibited; most of them the works of the human mind, which exercises choice and volition, which can abstract and combine ideas, which can understand, reason, imagine, remember, and which has complete sway over all the bodily powers; yet the work of men acting singly in their homes, or in factories, often at great distances from each other, and without guides or instructors. Who can say how much more rapid would be our progress, if, on occasions like these, we could direct the most powerful minds of all nations to the consideration of the steps necessary to further improvement?

The introduction of machinery, railways, telegraphs, gas, and steam power, and the wonderful discoveries of

chemistry, have all contributed mightily to human advancement. But much remains to be done, and means are at our hand for hastening great results. Let us, ere another International Exhibition comes, seek to bring about a greater recognition of the true economical principles in trading and industry among all nations; a greater adherence to a policy of peace and non-intervention; the adoption of higher principles in the law of nations; the removal of the differences still existing in the mercantile laws and in the weights, measures, and coins of all countries; the introduction of a common scale for the thermometer and barometer, and a common meridian for the measurement of longitude. These are only a few measures, yet each of them of mighty importance and pregnant with great results.

It is time, however, to bring these observations to a close. For months past we have seen the worshippers of human productions, ourselves among the number, crowding the courts of that vast edifice where the utmost of human ingenuity has been displayed, and we have heard nothing but expressions of wonder and admiration. But oh, how trivial do these Exhibitions appear when we place them side by side with the works of God! What, after all, can human mind and human hands do but make some feeble attempts to fathom His works? What are the glorious results of science but the discovery of those laws which He has established, or the properties of those numberless objects which He has created? Compare these toys of human production with a range of lofty mountains, the wide ocean, the starry heaven, the beauteous sun, or the fairy moon; compare them with the wonders of the animal or vegetable world constantly before our eyes. Thankful, indeed, we should be that we are endowed with wonderful powers and ability; that we are enabled to attain so much knowledge, and embrace so many objects. But oh, what are we to Him who is wonderful in counsel and excellent in working, to Him who doeth great things, and unsearchable, marvellous things without number?

Yet another observation, and I have done. The nations of the earth have once more responded to our appeal to exhibit their heart and industry. Once more have we seen men of different races and climes fraternising together in the great work of industrial progress. States which once never met but for mutual slaughter are now united for their mutual welfare. Never was the dependence of nations on each other's produce and industry made more palpable; never were the distinctive characteristics of each State made more conspicuous than in this Great Exhibition. We are now about to separate. The splendid articles which cemented this precious bond of brotherhood are about to be scattered. Will they leave no lasting impression on our international relations? Shall we allow the kindly sentiments, now happily engendered, soon to die away? I trust not; I have faith in the great designs of the Almighty. What are these railways, telegraphs, steam-packets, treaties of commerce, free navigation, free trade, and International Exhibitions, but so many steps in the great ladder, so many links in the great chain, of human unity. May we ascend this ladder higher and higher, and abandoning for ever those jealousies and rivalries which have neutralised the best designs of human creation, and thwarted the kindly purposes of a gracious Providence, realise the great fact that in truth and in deed our truest interest is to contribute to one another's good.

The CHANCELLOR of the EXCHEQUER, in thanking the lecturer for his admirable and eloquent lecture, said it was hardly necessary to do so after the hearty and spontaneous tribute which had been paid by the audience; but in giving articulate expression to his and to their gratification, he could say that it was not a mere ceremonial on his part, but that it having been his lot in life to be brought into communication with those who represented industrial and mercantile interests, he felt deeply and warmly the eloquence of language, the justness of thought, and the



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proposed embankment gradually extends into the river as the river widens, until it reaches the first pier of Waterloo-bridge and the new Charing-cross Railway-bridge, from whence it passes, in a line nearly parallel with the present foreshore of the river, to the South embankment of Westminster-bridge.

The present docks would all be thus maintained and lengthened, and about thirteen acres of land would be added to the wharves. The river is at the same time so wide opposite the localities where the embankment extends into it that there is, if desirable, abundance of room for the storage of timber upon the foreshore, as at present, and the value of the land reclaimed ought to refund a considerable portion of the cost of reclaiming. In my preliminary report I estimated the cost of this work at £250,000, but as it will be prudent to provide for deeper foundations than I at that time anticipated, and allowing for contingencies, I now estimate it at £350,000.

The embankment recommended by the Royal Commissioners between Westminster and Chelsea bridges is estimated to cost £1,100,000, inclusive of compensations. Probably the most useful part of this scheme consists in the formation of a roadway from Westminster-bridge and the Palace New-road to a point near Vauxhall-station, whence six or seven important lines of thoroughfare diverge in different directions.

To accomplish this object, I propose to construct a roadway similar to that recommended by the Royal Commissioners up to Lambeth-bridge, but not extending quite so far into the river, and to form a junction with that bridge at its southern abutment. This line would form a better approach to the bridge, and would not interfere with its construction, as the line recommended by the Royal Commissioners must necessarily do. I propose to terminate the embankment a little above the bridge, and to cut off the projecting piece of land, and thus widen the river at its narrowest gorge opposite Millbank Penitentiary. Thence I propose to continue the roadway in nearly a straight line to the point near Vauxhall-station, at which the roads above referred to converge. The embankment and roadway above this point are of less importance, and might for the present, with less public inconvenience, be postponed. Those premises above Vauxhall-bridge which are now subjected to flooding at high tides can be secured against this by raising their wharf wall three or four feet higher, at a very small cost to the owners thereof. The estimated cost of the works above Westminster-bridge herein recommended is £250,000, which, added to the cost of the embankment from London-bridge to Westminster-bridge (viz., £350,000.), makes a total of £600,000 for works, and leaves a margin of £500,000 upon the estimate of the Royal Commissioners (viz., £1,100,000) to cover compensations—an amount which, without having gone into the matter in detail, I believe will be found to be ample for the purpose.

I have the honour to be, Gentlemen,

Your most obedient servant,

J. W. BAZALGETTE, Engineer.

To the Metropolitan Board of Works.

It was ordered that this report should be printed, and the engineer was directed to prepare plans showing the present state of the banks of the river and what they would be if his plan were carried out.

### Home Correspondence.

#### THE PROPOSED EXHIBITIONS OF SPAIN AND TURKEY, IN 1863.

SIR.—Exhibitions, National and International, are now an "Institution," and their value in promoting both material and social progress very generally recognised. The direct pecuniary results of the latter hitherto realised in England and France cannot fairly be taken as a test of their importance, as these depend on contingencies

which do not affect the object for which such Exhibitions were established. The whole system is of course as yet in its infancy, for three trials only, one in France and two in England, do not afford sufficient reliable evidence on this secondary point, but the experience thus far gained supplies most valuable material for better organisation hereafter.

My present object, however, is not to discuss this question, but to inquire whether similar Exhibitions might not reasonably be introduced into other countries less favourably situated than France and England. To some extent the one held at Florence last year illustrates what I mean. It was modestly called a *National Exhibition*, but there were many articles admitted of foreign origin, which assisted to give interest to a display the more creditable that it was improvised in a country in which native talent and enterprise were, until lately, repressed rather than encouraged.

A similar *National Exhibition* for Spain is for the first time announced, to be held at Madrid in 1863, at the expense and risk of the Government of that country. As in Italy, however, there are reasons why a distinctly *International* character cannot, perhaps, be given to this Exhibition. The funds for purposes of national improvement at the disposal of the Government are very limited, and the physical impediments to easy communication with the rest of Europe still formidable, although a network of railways is already in rapid process of development. There are also fiscal difficulties to be removed or diminished, before native producers can be stimulated to depend solely on their own resources, and to witness without alarm the introduction of foreign products even by way of sample.

But why should this be? Of all European countries, Spain is the richest in the sources of natural wealth. Of this, its history from the earliest times affords abundant evidence, but, after the discovery of South America, its native mines were abandoned for the more easily acquired riches of the New World.

To what extent the mines of the old country are now worked, I must confess my ignorance, but we all know that many valuable mineral samples were to be found in the Spanish Department of our recent Exhibition. Indeed, the extent and variety of articles deposited there under classes 1, 3, 4, 19, 20, 21, and 25, as compared with those exhibited in 1851 and 1855, afford the most decided evidence that, but for the difficulties before alluded to, Spain ought to take a more prominent commercial position than it does in the rank of European nations.

Now, it is because I think this, that I wish to suggest to the promoters of the ensuing Spanish Exposition that they would be taking a step in the right direction were they at once to announce that, though it is ostensibly intended to be *national*, yet they would cheerfully receive and give space and prominence to the contributions of foreign producers, provided the expenses were borne by such exhibitors, for the government of that country cannot afford to incur so formidable a pecuniary responsibility as the liberal measure I have ventured to indicate would involve. I have reason to believe that the increased intelligence of the mercantile and other interests of Spain, would rather hail as a new source of experience and enterprise, than repel as a dangerous innovation, such an opportunity of comparing, *on their own soil*, the joint products of other countries and their own.

Assuming the adoption of this suggestion, there is one facility which the Spanish Government could, and no doubt would, afford to foreign exhibitors, and that is, freedom from Custom-house annoyances, for which purpose similar regulations to those which were introduced by the authorities of that department in England and France on occasion of the International Exhibitions, and which have worked so well, might be established.

But it will no doubt be asked on what ground has Spain a right to expect that an invitation, such as that for which I plead, will be responded to? I answer, that

self-interest will probably be the main inducement on the part of foreigners to send articles for exhibition. Although it is known that many who have already tried the experiment have sustained heavy pecuniary losses, it is also true that others have been large gainers by it. To many exhibitors it was no experiment, as they were prepared, on patriotic principles, to submit to a personal sacrifice. While some had reason to feel disappointment, the sales actually effected by others in the extensive orders taken from the samples therein shown have been so considerable as not only to *recoup* them the original outlay, but to encourage them to seize every opportunity that may hereafter be offered of attempting similar speculations.

From causes already suggested, many foreign goods have never been seen in Spain, and it is not, therefore, an improbable supposition that a new market for the mutually profitable exchange of foreign for native products, on a larger scale than has hitherto been obtained, will be opened up. It may then and in due time, as in 1855 in France, induce Spanish consumers to inquire whether the time has not arrived when they may hope to enjoy similar advantages to those which the recent commercial treaties of France, England, and Belgium, have conferred.

It is scarcely necessary for me to add that the foregoing considerations are almost equally applicable to the *National Turkish Exhibition*, just announced to be held at Constantinople during the spring of next year.

Altogether, then, I do hope that the suggestion I have now made will be seriously entertained and adopted, in which case I have no doubt that commissions will be at once appointed, here and elsewhere, to initiate and facilitate the measures necessary to give it full effect.

I am, &c.,

THOS. WINKWORTH.

Gresham Club, Nov. 17th, 1862.

#### PRESERVATION OF TIMBER.

SIR,—In the *Journal* of your Society of the 31st ult., you gave an abstract from the translation of Mons. de Lapparent's essay on the "Preservation of Timber for Shipbuilding and other purposes," by a new process of carbonisation by gas.

Allow me to state, for the information of those interested in this important subject, that the arrangement for working this patent in Great Britain has been entrusted to Messrs. York and Co. (constructors of the "Palais de l'Industrie," of 1855, in Paris), whom I represent in this country, and who will be happy to afford any information, or shew the system in operation to those who will call at this address.

I am, &c.,

JAMES WILSON.

2, Royal Exchange Buildings, London, Nov. 10th, 1862.

#### UNION OF INSTITUTIONS.

SIR,—At the meeting recently held upon the occasion of the distribution of the certificates and prizes gained by members of the London Mechanics' Institution, at the Society of Arts' last Examination, Mr. Chester said, in the course of his speech, that it was under consideration how best a Union might be made of the Institutions of the same kind in London. Believing this to be a very desirable object, I venture to send you a few suggestions.

The Union, I think, should be of all the Institutions of this kind in the kingdom, and every member of any one Institution should be, except as to their internal government, a member of all others. In admitting Institutions into the Union, their designation, and the amount of the subscription their members pay, should not be considered; the sole requirement should be that they are engaged in the work of educating those who do not go to any of the Universities.

There are four departments in most of these Institutions; the classes, the books, the lectures, and the news-room.

Most persons will be content with the classes in their own Institution, but they should be permitted to attend

those of any other Institution of the Union at the rate (usually I believe a reduced one) charged to the members of that Institution, to which, however, they must also pay as much (if anything) as its subscription exceeds that of their own Institution. If I belong to Institution A, for which privilege I pay 4s. per quarter, and wish to join the Latin class in Institution B, the subscription to which (Institution) is 6s. a quarter, and to its Latin class (under the present arrangement) nothing if the student is, but 5s. if he is not, a member of that Institution, I should be allowed to do so on paying 2s. a quarter to Institution B, and nothing to the class.

Much more advantage can be gained in the second department—that of the books. A reader who chooses his books from one of the small libraries which are now scattered over London, must be diffuse in his reading. If all the libraries are open to him, he will find plenty of books on every subject, and, naturally taking from each what it has on his favourite branch of knowledge, he will become a student. If committees are formed to superintend the purchase of books by the different Institutions in districts of moderate extent, a continual supply of the best new books may be obtained. There will be no great difficulty in arranging the details of this plan when the proper time arrives.

As to lectures, whenever any Institution has a lecture-hall larger than necessary for its own members, members of other Institutions should be admitted free to the superfluous portion.

The community of news-rooms would be advantageous chiefly to travellers. Some arrangement would perhaps be necessary, as in the case of classes, for extra payments.

While all the Institutions in the kingdom are thus united (and I think they might well place themselves under the presidency of the Society of Arts), the Institutions in districts of convenient size might be united more closely for purposes of mutual advice and assistance. For each district there should be a Council, composed of two or three representatives from each Institution. As it would be best not to entrust any power to this Council, and as wisdom is not always the product of simple addition, the same number of representatives should be sent from each Institution, irrespective of the number of its members.

As to the holders of the Society's certificates, an immense stimulus would be given to education throughout the country by what would be an act of justice—the conferring upon the certificate holders the right of electing a member of the House of Commons, or the right of voting at the election of the member for the place in which they reside. This, however, is out of the question while the present state of public feeling continues.

I am, &c.,

WALTER SLATER.

London Mechanics' Institution,  
November 7, 1862.

#### To Correspondents.

ERRATUM.—In the List of Members recently issued, for "Carey, Stephen, Carpenden-house, Snow's-fields, S.E.," read "Carey, Stephen, Camperdown-house, Snow's fields, S.E."

#### MEETINGS FOR THE ENSUING WEEK.

- MON. ...Medical, 8½. Lettsomian Lecture. Dr. James Bird, "Private Hygiene: The Means of Preserving Individual Health. Public Hygiene: Collective Differences in the Organic Type of Masses, Mortality and Duration of Life, &c."
- R. Geographical, 8½. "Latest Exploration in Africa, by Dr. Livingstone and his Brother, Mr. Charles Livingstone, Captains Speke and Grant; Consul Petherick; Captain Baker; R. Moffatt; Capt. Burton, &c."
- TUES. ...Zoological, 9.
- Civil Engineers, 8. Mr. Wm. Cudworth, "The Hownes Gill Viaduct, on the Stockton and Darlington Railway."
- WED. ...Society of Arts, 8. Dr. B. H. Paul, "On the Utilisation of Peat, with reference more particularly to the Manufacture of Hydro-Carbon Oils."
- THURS. ...Royal, 8½.
- Antiquaries, 8½.

## PATENT LAW AMENDMENT ACT.

## APPLICATIONS FOR PATENTS AND PROTECTION ALLOWED.

[From Gazette, November 14th, 1862.]

Dated 7th July, 1862.

1958. J. McGeary, Bayham-terrace—Imp. in the manufacture of gas, and the apparatus to be employed for that purpose. (Partly a com.)

Dated 23rd August, 1862.

2355. F. T. Moison, 13, Rue Gaillon, Paris—Imp. in the process of cleaning organic matter.

Dated 30th August, 1862.

2409. W. E. Gedge, 11, Wellington-street, Strand—Imp. in machinery or apparatus for manufacturing velvet. (A com.)

Dated 26th September, 1862.

2629. W. E. Gedge, 11, Wellington-street, Strand—Imp. in the construction of leaden window sashes, casements, or glazed coverings or partitions. (A com.)

Dated 9th October, 1862.

1725. J. H. Johnson, 47, Lincoln's-inn-fields—Imp. in polishing precious and other stones, and in the machinery or apparatus employed therein. (A com.)

Dated 13th October, 1862.

2757. W. G. Haig, Canonbury-park North—A new article of apparel to be worn instead of or in addition to a shirt front and waist coat.

Dated 14th October, 1862.

2766. J. Snider, jun., 51, Dorset-street—Imp. in the construction of "Hansome cabs," and other similar vehicles.

Dated 27th October, 1862.

2888. W. J. Williams, 51, Dorset-street, Canonbury-square—Imp. in the construction of field rakes for agricultural purposes. (Partly a com.)

Dated 28th October, 1862.

2902. G. H. Smith, North Perrott, Somersetshire—Imp. in the manufacture of crinoline or elastic hoops for dresses.

Dated 29th October, 1862.

2910. A. Krupp, Essen, Prussia—Certain imp. in breech-loading ordnance and fire arms.

Dated 30th October, 1862.

2928. G. Mayall, jun., Liverpool, and J. Hollingworth, Micklehurst, Cheshire—Certain imp. in machinery or apparatus for preparing cotton and other fibrous materials for spinning.

2930. G. Piggott, Birmingham—New or improved machinery for punching, shearing, and rivetting sheets or plates of iron and other metals and alloys.

2932. J. Horton, Smethwick, near Birmingham—Imp. in the construction of armour plated ships and fortifications.

2934. A. Guild, Horbury-gardens, Notting-hill—Improved apparatus for preparing and treating leaves and stalks of fibre-yielding plants and for cleaning and dressing the same.

Dated 31st October, 1862.

2936. W. Astrop, Jubilee-street, Stepney—Imp. in the manufacture of paper.

2940. D. Spink, Spaxton, near Bridgewater, Somersetshire—Imp. in the method of propelling ships and other vessels.

2942. C. Gubbins, York-place, Portman-square—Imp. in irons for ironing.

2944. H. Thomson, Buckden, Huntingdonshire—Imp. in railway signals.

2946. G. Speight, 5, St. John-street-road, Clerkenwell—An imp. in the manufacture of collars for men's wear.

2952. W. Jenkins, Troedy Rhiw, Merthyr Tydvil, Glamorganshire—An improved mode of and apparatus for cutting coal.

Dated 1st November, 1862.

2958. E. Stevens, 15, Hunter-street, Brunswick-square—Imp. in iron shelves, stands, and racks.

2960. E. Hopkins, Clarendon-gardens, Maida-hill—An improved mode of and apparatus for treating ores for the extraction of metals therefrom.

Dated 3rd November, 1862.

2964. C. Shield, Newcastle-on-Tyne—Imp. in the manufacture of malleable cast iron.

2968. E. Humphrys, Deptford—Imp. in the construction of centrifugal pumps.

2970. T. O. Clark, Clapham-common—An improved portable spring bottom bedstead. (A com.)

2974. W. H. Stallard, Mark-lane—Imp. in umbrellas and parasols.

Dated 4th November, 1862.

2978. J. McKean, Walmer Bridge Mills, near Preston, and T. Greenall, Manchester—Imp. in sizing or dressing yarns or textile materials.

2980. T. Logan, Kensington—An improved kaleidoscope.

2986. J. E. F. Ludeke, Marke, Hanover—Imp. in magneto-electric apparatus for obtaining and applying motive power.

2988. A. Wall, Canton-street East, India-road, Poplar—Improved process for purifying lead, and extracting and separating silver therefrom, and in machinery for those purposes.

Dated 5th November, 1862.

2990. S. Robotham, Birmingham—Imp. in carriage bodies.

2992. W. Johnson, 166, Buchanan-street, Glasgow—Imp. in the arrangement and construction of pillars or standards for supporting telegraph wires. (A com.)

2994. R. A. Brooman, 166, Fleet-street—Imp. in taps or cocks. (A com.)

2996. C. Shield, Newcastle-upon-Tyne—Imp. in the manufacture of malleable cast-iron.

2998. J. Petrie, jun., Rochdale, and J. Teal, Sowerby, Yorkshire—Imp. in machinery or apparatus for washing wool and other fibrous materials.

3000. D. Hill, 8, Camden-road, Holloway—Imp. in apparatus for stamping or marking and counting bank notes and other documents.

3002. T. Brown, 85, Wood-street, Cheapside—Imp. in machinery for surfacing fibrous materials. (A com.)

Dated 6th November, 1862.

3004. W. E. Gedge, 11, Wellington-street, Strand—An improved lift and force pump. (A com.)

3006. H. Griffin, Silvertown, Essex—An improved method of securing india-rubber cylinders or rollers and blocks upon spindles and other bodies on which they are to be mounted.

3008. J. A. Fullarton, Manchester—Imp. in machinery or apparatus for painting and coating hoop iron and other strips, bars, rods, or other such articles of metal, wood, or other material.

## PATENTS SEALED.

[From Gazette, November 14th, 1862.]

November 14th.

1415. H. Walker.

1498. R. Davison and T. Johnson.

1508. J. Wright.

1515. T. Morris, R. Weare, and E. H. C. Monckton.

1516. T. Morris, R. Weare, and E. H. C. Monckton.

1521. W. Naylor.

1523. J. Taylor.

1525. E. Fewtrell.

1528. W. Patrio.

1540. C. W. Siemens.

1545. S. Turnbull & F. Turnbull.

1557. W. E. Wiley.

1573. W. Worby.

1609. J. A. Ransome.

1691. E. Conroy.

1701. E. Conroy.

1702. G. Hadfield.

1810. M. Wigzell.

2426. W. Hunt.

[From Gazette, November 18th, 1862.]

November 18th.

1533. M. A. Le Brun Virloy.

1534. W. Bush.

1542. E. de la Bastida.

1544. J. Needham.

1550. H. Cook.

1558. J. Webster.

1560. E. Mouline.

1562. A. Samuelson.

1576. G. A. Huddart.

1588. F. Tolhausen.

1608. W. Blackmore & H. Lumb.

1636. J. Ives.

1934. J. Webster.

1940. W. M. Williams.

2445. B. F. Cowan.

## PATENTS ON WHICH THE STAMP DUTY OF £50 HAS BEEN PAID.

[From Gazette, November 18th, 1862.]

November 11th.

2570. A. Vickers.

2595. J. Graham.

2615. S. Corbett.

2623. A. Godchaux.

2635. G. W. Lennox.

November 12th.

2578. J. Walworth and R. Harrowby.

November 14th.

2585. W. H. Ward.

2586. E. Borlase.

2603. J. Ward and H. Burman.

2619. E. Barlow and F. Hamilton.

November 15th.

2610. J. McKenzie and S. T. Wentworth.

## PATENTS ON WHICH THE STAMP DUTY OF £100 HAS BEEN PAID.

[From Gazette, November 18th, 1862.]

November 11th.

2581. G. T. Bousfield.

2768. H. Bessemer.

November 12th.

2597. G. Collier & J. W. Crossley.

November 14th.

2602. W. Smith.

November 14th.

2612. A. V. Newton.

## LIST OF DESIGNS FOR ARTICLES OF UTILITY REGISTERED.

No.	Date of Registration.	Title.	Name.	Address.
4522	Nov. 6	A Needle Case ... ..	Arthur James...	Redditch.
4523	" 11	A Fastener for Boas, Victorines, Scarfs, } Ties, and other articles ... ..	Geo. Philippe Lempriere ...	Birmingham.
4524	" 14	Needle-plate for Sewing Machines ... ..	William Newton Wilson ...	144, High Holborn, W.C.